BURNOUT AMONG DUTCH GENERAL PRACTITIONERS

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Burnout among Dutch General Practitioners

An empirical study of the determinants of physician burnout

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Abstract

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Keywords: burnout, professional burnout, psychological health, work stress, physicians, general practice, family medicine

This study aims to examine to what extent Dutch GPs are at risk for burnout, and to identify personal, professional and practice related characteristics that are associated with high burn out scores. In the extant literature, physicians are identified as professionals who are high risk for burnout. In the past decade, working conditions for general practitioners (GPs) in the Netherlands have changed for the worse. There are no recent data on GP burnout in the Netherlands. Although much is known in the literature about factors that are associated with burnout and the role job demands and resources play in getting burned out, the extent to which these findings apply in the context of Dutch GPs is unknown.

This study is designed as a quantitative, survey based, empirical study. An invitation to complete an online survey was sent to 4,000 GPs in the Netherlands, of whom close to 1,300 participated in this study (33% response rate). The data were analysed using IBM SPSS 22.0. The data analysis consisted of a descriptive analysis of the data with an emphasis on the outcome of burnout measurements, as well as an inferential analysis of the data with an emphasis on the association between respondents' characteristics and burnout measurements.

The results from this study indicate, that one in seven practicing Dutch GPs could be classified as burned out with fulltime working GPs reporting an average working week of 62 hours. According to the findings, the amount of hours worked per week is the most important determinant of emotional exhaustion. Variation in emotional exhaustion, depersonalisation and professional efficacy can to a large extent be explained by variation in demands (administrative burden, work-home conflict, psychological job demands) and resources (decision latitude, co-worker support and home support). Increased job demands are predominantly associated with emotional exhaustion, while a scarcity of resources predominantly leads to increased depersonalisation and reduced professional efficacy. The findings demonstrate, that a bigger job size, more hours worked and a more responsible position held, are associated with higher experienced demands, which is in turn associated with unfavourable burnout scores, particularly increased emotional exhaustion. Working in a group setting, being professionally active outside of one's own practice and being in a relationship were found to be associated with increased resources, which is in turn associated with favourable burnout scores, particularly decreased depersonalisation and increased professional efficacy.

Based on the findings of this study, three recommendations for government bodies, healthcare providers and other healthcare stakeholders were formulated: 1) Reduce the length of the working week, predominantly by reducing the number of allocated patients per GP. This recommendation implies an increase in the GP workforce; 2) Undertake a comprehensive analysis of the quantity, type and purpose of administrative duties currently performed by GPs and trim unnecessary paperwork and bureaucracy within the GP practice and 3) Increase co-worker support, either within the GP practice or by using the existing collegiate support infrastructure.

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List of Abbreviations

Adm	Administrative burden
ANOVA	Analysis of Variance
BM	Burnout Measure
COPD	Chronic Obstructive Pulmonary Disease
CS	Co-worker Support
DA	Decision Authority
DBA	Doctor of Business Administration
DC	Demand-Control (model)
DCS	Demand Control Support (model)
Dep	Depersonalisation
EE	Emotional Exhaustion
FBI	Freudenberger Burnout Inventory
FTE	Fulltime Equivalent
GP	General Practitioner
HR	Human Resources
HS	Home Support
ICD	International Classification of Diseases
JCQ	Job Content Questionnaire
JDCS	Job Demand Control Support (model)
JD-R	Job Demands-Resources (model)
LHV	Landelijke Huisartsen Vereniging [National Association of General Practitioners]
M	Mean
MBI	Maslach Burnout Inventory

MLR	Multiple Linear Regression
MEMO	Minimizing Error Maximizing Outcome
NHG	Nederlands Huisartsen Genootschap [Netherlands Society of General Practitioners]
PE	Professional Efficacy
PEr	Reduced Professional Efficacy
PJBI	Perceptual Job Burnout Inventory
PJD	Psychological Job Demands
PWS	Physician Worklife Survey
ROS	Regionale OndersteuningsStructuur [Regional (Healthcare) Support Structure]
SBS-HP	Staff Burnout Scale for Health Professionals
SCP	Sociaal en Cultureel Planbureau [The Netherlands Institute for Social Research]
SD	Standard Deviation
SD	Skill Discretion
SPSS	Statistical Package for the Social Sciences
SSL	Secure Socket Layer
UBOS	Utrecht Burnout Scale
UBOS-C	Utrecht Burnout Scale Client-intensive occupations
VAAM	Vraag Aanbod Analyse Monitor [Supply and Demand Analysis Monitor]
WHC	Work-Home Conflict

Chapter 1 Introduction

1.1 The general practitioner: a key player in Dutch healthcare with increasing work pressure

General practice care plays a key role in the Dutch healthcare system. Patients with medical problems are required to first consult their general practitioner (GP) in all instances. For access to medical specialist care in a hospital a referral by a GP is required. A GP is only allowed to issue a referral letter if he or she is convinced of the medical necessity to refer the patient to a hospital (Rijksoverheid 2016).

There are 8,812 GPs working in the Netherlands in 5,068 practices (Nivel 2015). As a norm, an individual fulltime working GP has 2,168 registered patients (LHV 2016a). Patients visit the GP four times per year on average, which brings the average number of consultations per fulltime working GP per year to 8,882 (LHV 2016a). Virtually all Dutch citizens are registered with an individual GP. By the end of 2015 the Netherlands had 16.9 million inhabitants (CBS 2016), 16.4 million of them are registered with a GP (ION 2016).

According to the LHV (2016a), the professional organisation of GPs in the Netherlands, only one in 20 GP consultations leads to a referral to a hospital. In 94% of GP patient encounters the GP is able to help to patient without referral (LHV 2016a). Because of this role, the GP is often referred to as “the gatekeeper of healthcare” (Groenewegen 2016, p. 15). The positioning of the GP as a gatekeeper to first point of care treatment helps control the cost of healthcare. Of the total healthcare budget of the Netherlands of 72.9 billion euros, only 2.7 billion (3.8%) is spent on general practice care (VWS 2015).

Because of this efficiency, it is governmental policy to substitute as much care as possible from the relatively expensive hospital setting to general

practice care and other first line care settings, especially for chronic diseases such as diabetes. In 2015 the amount of ‘substituted care’ added up to 61.2 million euros and this amount keeps increasing. For 2016, parties in healthcare agreed to substitute no less than 94.8 million euros of care from the second line (hospitals / medical specialists) to the first line of health care. About half the amount of substituted care is substituted to general practice care, the other half to so-called multidisciplinary care groups, more of less formalised collaborations of general practitioners, physical therapists, and other healthcare professionals (KPMG 2016).

This substitution of hospital care by care provided by GPs increases the workload of GPs considerably. First of all, the amount of care provided by the GP increases, but also the organisation of multidisciplinary care requires collaboration and organisation, which also cost time. In order to manage the increased workload, the budget for support staff has increased significantly in the past years. As an example, the budget for support staff specialised in mental health care rose from 13.6 million euros in 2010 to 108.5 million (+695%) in 2014 (Vektis 2016), which increased the need for the GP to dedicate time to human resources management.

A second compounding factor that contributed to the workload of GPs is the so-called extramuralisation of elderly care. Until 2014, the cost of staying in a nursing home was financed by the General Exceptional Medical Expenses Act (Algemene Wet Bijzondere Ziektekosten 1968). This act was abolished in January 2015 and replaced by the Chronic Care Act (Wet Langdurige Zorg 2015). Under the Chronic Care Act, the cost of staying in a nursing home are only partly reimbursed (income dependent). In addition, access to nursing homes is restricted to patients who meet certain medical criteria. It is government policy to help elderly to stay at home as long as possible and to reduce nursing home admissions (VWS 2016). This transition in elderly care implies that an increasing amount of elder patients, often with multi morbidity,

whose medical care used to be provided by nursing home physicians, now receive their care from a GP.

A last development that needs to be mentioned here is the introduction of the Health Insurance Act in 2006 (Zorgverzekeringswet 2006). Until 2006, the Netherlands had a public insurance for the cost of healthcare, including the cost of general practice care, by which 70% of the population was insured at a very low premium. For the richest 30% private healthcare insurances were available (KHZ 2016). In 2006, the public insurances were abolished and replaced by a mandatory private healthcare insurance for all, provided by commercial insurance companies. The minimal coverage is defined in the Health Insurance Act. It is the legal duty of the commercial insurance companies to control the quality of the care provided as well as its cost efficiency (VWS 2016).

InEen et al. (2016) describe what happened after the introduction of the Health Insurance Act as follows:

- GPs experienced an asymmetry in contract negotiations and, as a result, GPs felt that insurance companies dictated the conditions under which a contract could be closed between a GP and an insurance company, without room for negotiation.
- GPs deemed that their income was threatened by commercial insurance companies who abused their buying power to lower the cost at the expense of individual GPs.
- In addition, the insurance companies required prescriptions for e.g. incontinence products to be thoroughly substantiated which was perceived by GPs as a lack of trust and unnecessary bureaucracy.
- The GPs were also required to document on their quality of care. To this end GPs had to report on numerous quality indicators in order to qualify for full reimbursement.

- In March 2015, GPs were fed up with this situation and publically called out for a radical change. The GPs demanded more balance of power in contract negotiations and less bureaucracy. Within weeks, this manifesto was signed by over 8,000 GPs, which accounts for over 90% of the profession.
- Since October 2015, GPs, patient organisations, government and insurance companies are joining forces to reduce the administrative burden and to increase mutual trust (InEen et al. 2016).

1.2 Changes in general practice care: a potential threat to GP wellbeing

In the previous section three developments were mentioned that have increased the workload for GPs: 1) substitution of care from hospitals to general practice; 2) reduced nursing home admissions and 3) the introduction of commercial healthcare insurance. In addition to increasing the workload, the commercialisation of healthcare insurances has led to an increase of bureaucracy as well as to an atmosphere of distrust (InEen et al. 2016).

In the past two decades, physicians have been consistently identified as professionals at risk for burnout in the academic literature: physicians report high levels of emotional exhaustion and depersonalisation, often combined with reduced professional efficacy (e.g. Doan-Wigging et al. 1995, McCray et al. 2008, Orton et al. 2012, cf. Section 2.4.5, p. 47). Particularly physicians in the front line of healthcare access are at risk for burnout (Shanafelt et al. 2012).

Burnout among Dutch GPs has been the topic of academic research in the 1990's (Van Dierendonk et al. 1992, 1994) and the first decade of this this century (Bakker et al. 2001, Twellaar et al. 2008, Houkes et al. 2008). These

studies all found the prevalence of burnout among Dutch GPs to be high. The latest measurement, however, dates back to over a decade ago (2002/2004, cf. Section 2.4.6, p. 50). These measurements all predate the recent developments in Dutch general practice care. In is not known whether the recent changes have had an adverse effect on GP wellbeing, which provides the first rationale for this study.

In July 2012, the insurance company Movir, an ING subsidiary that insures most physicians in the Netherlands against disability, held a survey amongst 3,000 Dutch GPs on their job satisfaction and work-related stress (Movir 2012, Duchatteau and Schmidt 2012). This survey, executed by the author of this thesis, revealed that 70% of all GPs had noticed symptoms of burnout in themselves. 15% of GPs reported that they had actually been burned out in the past. This survey, however, did not make use of a standardised and validated measurement instrument, which made it impossible to compare the findings to previously published studies.

The results of the Movir survey did indicate that burnout indeed is an issue for GPs in the Netherlands. When the Movir study was published, it received nationwide media coverage in virtually all national newspapers (Docter 2012, Mantel 2012, nu.nl 2012, Seegers 2012, Trommelen 2012) as well as on the TV news (NOS 2012, RTL 2012). In the public broadcast TV news, the chairman of the National General Practice Association LHV responded by stating that the findings of the survey were important and that they

> *"… call for further exploration and solutions. We suspected for some time that the workload and stress among general practitioners is an issue. With this large-scale study this has now been established objectively"* (NOS 2012).

This study aims to contribute to the further exploration and solutions that were called for, according to the LHV.

1.3 Aims of this study

Considering that physicians, especially those in the frontline of healthcare access, have been identified as being at risk for professional burnout, and considering that recent development in Dutch general practice might have had adverse effects on the wellbeing of Dutch GPs, the first aim of this study is to provide a more current snapshot of burnout levels and burnout prevalence amongst Dutch GPs.

In the international literature, many factors that are associated with physician burnout are identified such as age, gender, working long hours, work-home conflict and an excessive workload (cf. Section 2.4.4, p. 43). The previous studies carried out in the Netherlands did not specifically look at these characteristics. Identifying relevant characteristics for Dutch GPs therefore is another aim of this study.

In addition to providing a repeat measure for burnout prevalence 10 years after the last measurement and in addition to investigating factors that are associated with physician burnout in a different setting (Dutch GPs), this study aims to contribute to knowledge by including two novel elements as described below: 1) the combination of existing theoretical frameworks and 2) the inclusion and examination of alternate variables which potentially influence burnout.

1) In the literature several theoretical frameworks are used in the context of physician burnout research. Most studies either focus on the physician's personal and practice related characteristics and their association with burnout scores (cf. Section 2.4.4, p. 43), or on the role of job demands and resources (cf. Section 2.3.5, p. 33). This study attempts to combine these existing theoretical frameworks in the same study. This approach is the first novel element of this study.

2) The composition of the patient population of a GP practice (e.g. prevalence of chronically ill patients or demographical composition) and the practice environment (e.g. socioeconomic status) has so far had little attention in the burnout literature (cf. Section 2.5, p. 56). This study includes these variables as well, which is the second novel element of this study.

Insight in the factors that are associated with GP burnout and the role that demands and resources play in developing professional burnout, should help to propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs, which is the last aim of this study.

Summarising the aims of this research, this study proposes to:

- present an update on previous measurements among GPs in the Netherlands,
- provide insight in relevant characteristics that are associated with increased burnout scores for Dutch GPs,
- provide insight in the role that job demands and resources play in the development of burnout for Dutch GPs.
- include new, not previously studied, characteristics such as patient characteristics and practice environment characteristics,
- propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs.

In order to address the aims of this study, the following research question was formulated:

"To what extent are Dutch general practitioners at risk for burnout as measured by its three dimensions[1] (emotional exhaustion, depersonalisation and reduced professional efficacy) and to what extent can variation in the three dimensions of burnout be explained by differences in personal, professional and practice characteristics? To what extent can variation in the three dimensions of burnout be explained by job demands and resources?"

To answer this question, five specific research objectives were formulated:

1) *To assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy, the three dimensions of burnout, in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout.*
2) *To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy.*
3) *To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in job demands and resources.*
4) *To identify specific groups within the profession that are at risk for burnout.*
5) *To propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs.*

[1] For this study Maslach and Jackson's definition of burnout is adopted (Maslach and Jackson 1981, 1986). The different definitions of burnout are discussed in Section 2.2.3, p. 20.

1.4 A brief overview of this study

This study is designed as a theory driven, confirmatory, empirical study that has a fixed design. Data is predominantly collected by means of a non-experimental, cross-sectional measurement that is performed by means of a large scale (online) survey.

The survey is developed on the basis of the extant literature in the field of burnout research. The measurement instruments that are part of the survey underwent substantial scrutiny as evidenced by the literature (cf. Sections 2.2.4, p. 23 and 2.3.4, p. 30). The chosen instruments are widely used and considered to be valid and reliable. The two dominant measurement instruments are the Maslach Burnout Inventory (MBI), which assesses the respondent's level of emotional exhaustion, depersonalisation and professional efficacy and the Job Content Questionnaire (JCQ), which assesses the respondent's job demands as well as his or her available resources.

After the draft questionnaire was developed, the research proposal for this study plus the draft questionnaire were submitted to the university's Ethics Panel for review. The study received Ethics Approval from the Chair of the Humanities, Social and Health Sciences Research Ethics Panel at the University of Bradford on 28 April 2014.

Once ethics approval was granted (April 2014), the survey was piloted in a small-scale pilot (May 2014). Since the measurement instruments themselves were previously evaluated (including an evaluation of the Dutch language version and the applicability in the context of healthcare), the focus of the pilot was on technical aspects such as accessibility of the survey via various devices and readability of the questions.

After the feedback from the pilot study was incorporated in the survey in the summer of 2014, a letter inviting potential respondents was sent in September 2014 to 4,000 GPs in the Netherlands. A reminder letter was sent in October 2014.

At the end of November 2014 the online survey was closed. By that date 1,345 GPs had wholly or partly completed the online questionnaire. After deletion of only partially completed surveys, 1,298 fully completed surveys were available for analysis. The findings presented in the subsequent chapters are predominantly based on analysis of the responses provided by these almost 1,300 participants who together represent about one sixth of the entire profession in the country.

1.5 Summary

Working conditions for Dutch GPs, professionals who are known in the literature to be at risk for burnout, have worsened in the past decade. The GP's workload has increased, while the commercialisation of insurance companies has led to an increase in bureaucracy and a working climate of distrust. The combination of a previously identified high burnout risk and the worsened working conditions provides a rationale for revisiting the research topic of GP burnout in the Netherlands, a little over a decade after it was last researched.

In addition to providing a repeat measure of burnout levels and burnout prevalence among Dutch GPs, the study aims to identify factors that are associated with GP burnout and insight in the role that demands and resources play in developing burnout the context of Dutch general practice. The findings should help in coming up with recommendations for developing preventive measures, thus contributing to the practice of general care.

The study is designed as a theory driven, confirmatory, empirical study that has a fixed design. Data is predominantly collected by means of a large scale online survey that includes the Maslach Burnout Inventory and the Job Content Questionnaire. Almost 1,300 respondents, representing one sixth of the profession, participated in this study.

Before the methodology of this study is discussed in greater detail (Chapter 3, p. 58), the extant literature is discussed in the subsequent chapter, Chapter 2. In Chapter 2, an outlook is provided on the concept of burnout and the theories that aim to provide an explanation for burnout.

Chapter 2 Literature review

2.1 Introduction

Physician burnout is a serious problem (McCray et al. 2008). Burnout is more common among physicians than among any other group of workers (Shanafelt et al. 2012). The extant literature indicates that the consequences of physician burnout are considerable for the individual physician, the patient and society alike. For individual physicians, suffering from burnout is associated with psychiatric problems such as depression, suicidal thoughts or anxiety disorders (Pfenning and Hüsch 1994, Glass and McKnight 1996, Van der Heijden et al. 2008, Caplan 2013) and drug or alcohol abuse (Doan-Wiggins et al. 1995, Shanafelt et al. 2002, Soler et al. 2008). High burnout scores reportedly are associated with intent to leave the profession (Gallery et al. 1992, Doan-Wiggins et al. 1995, Schaufeli and Enzmann 1998, Linzer et al. 2005, Soler et al. 2008) and burnout appears to play an important role in early physician retirement (Dyrbye et al. 2013). Finally, research indicates that there is an association between physician burnout and reduced quality of care (Shanafelt et al. 2002, Linzer et al. 2005, Halbesleben and Rathert 2008).

In this chapter, the literature on burnout in general and more specifically physician burnout is reviewed. The chapter starts with an exploration of the concept of burnout (Section 2.2, p. 13), after which the phenomenon burnout is discussed in relation to two theories that aim to provide an explanation for burnout (equity theory and job experience). Section 2.4 (p. 35) focusses on burnout amongst physicians, including an introduction of conceptual models that are frequently used in physician burnout research. In the final section of this chapter (Section 2.5, p. 54) the ‘gap in literature’ is identified as a justification for the relevance of the research question that is addressed in this thesis.

2.2 The Concept of burnout

2.2.1 Initial introduction of the concept of burnout

Although some earlier references to the term burnout exist (e.g. Bradley 1969), the clinical psychologist Herbert Freudenberger is generally identified as the initial author that coined the term burnout. In his seminal paper, Freudenberger (1974) provides a detailed description of the combination of factors that was later to become the burnout syndrome. Freudenberger, working with juvenile drug addicts as a volunteer psychologist, saw the later famous combination of emotional exhaustion, cynicism and reduced professional efficacy amongst his volunteer colleagues in the free clinic. He describes how all his colleagues start out on their job with great enthusiasm and dedication. After about a period of one year they start to show signs of exhaustion, they develop a negative and frequently cynical attitude and they spend an ever increasing amount of hours in the clinic, while accomplishing less and less (Freudenberger, 1974).

A few years after Freudenberger's 1974 paper, the term burnout was coined by the social psychological researcher Christina Maslach. Whilst undertaking research on coping with emotional arousal by people in stressful jobs, she interviewed physicians, nurses and counsellors in Californian healthcare institutions. In her seminal paper 'The client role in staff burnout', Maslach (1978) describes a process of depersonalisation, even dehumanisation, in the staff-patient interaction. In another frequently cited paper published in the same year, Pines and Maslach (1978) define burnout as

> *"a syndrome of physical and emotional exhaustion involving the development of a negative self-concept, negative job attitudes, and a loss of concern and feeling for patients"* Pines and Maslach (1978, p. 233).

In the late 1970s and early 1980s the combination of the three main elements as also found by Freudenberger (1974), emotional exhaustion, cynicism and reduced professional efficacy, gains a lasting place in Maslach's definition of

burnout as she describes in the introductory chapter of the frequently cited book ‘Professional burnout, recent developments in theory and research’ (Maslach and Schaufeli 1993). In this book, Maslach defines burnout as:

> *"a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that occur among individuals who work with other people in some capacity. Emotional exhaustion refers to feelings of being emotionally overextended and depleted on one's emotional resources. Depersonalization refers to a negative, callous, or excessively detached response to other people, who are usually the recipients of one's services or care. Reduced personal accomplishment refers to a decline in one's feelings of competence and successful achievement in one's work."* (Maslach and Schaufeli 1993, pp. 20-21)

Burnout and occupational stress are two terms that are often used in conjunction. Often burnout is described as the result of chronic exposure to job-related stress. Brill (1984) defines stress as a temporary adaptation process that is accompanied by mental and physical symptoms. Over time, the level of mental dysfunction should reduce, either by reduction of the presence of the stressor or by effective coping. In the case of burnout on the other hand, the level of mental dysfunction remains high or even increases over time. This distinction by Brill (1984) is in line with the definition of burnout by Schaufeli and Enzmann that states that burnout “is self-perpetuating because of inadequate coping strategies” (Schaufeli and Enzmann 1998, p. 36).

Cordes and Dougherty (1993) point out the three-components-nature of burnout that sets burnout apart from other types of job-stress:

> *“The three-component model that burnout represents is unique as a stress phenomenon. At its core is emotional exhaustion, which is a traditional stress variable. The second component, depersonalization, is a new construct, not formerly appearing in the stress literature […]. Finally, although feelings of personal accomplishment […] are familiar to the stress literature, the third*

component of burnout, a diminished level of this variable, adds the assertion that self-evaluations are central to the stress experience."
(Cordes and Dougherty 1993, pp. 625-626).

The three-components-nature of burnout is key in all definitions of burnout, as will be discussed in greater detail in Section 2.2.3 (p. 20).

2.2.2 Developments in burnout research and associated fields of study

In the literature, different stages in burnout research can be observed. Table 2-1 below summarises the different stages in burnout research and identifies key researchers. The different stages in burnout research are discussed in greater detail below the table.

Table 2-1: Overview of key researchers and their role in the emergence and development of burnout as an academic field of study

Period	Key authors	Remarks
Late 1960 and early 1970	Bradley (1969), Freudenberger (1974)	First use of the term burnout and first definitions of burnout
Late 1970s and early 1980s	Maslach (1978, 1982) Maslach and Jackson (1981), Pines and Maslach (1978)	Burnout as a three component syndrome, development of Maslach Burnout Inventory (MBI)
Mid 1980s and 1990s	Many researchers including Armstrong, Buunk, Chernis, Cordes, Cooper, Van Dierendonck, Dougherty, Enzmann, Golembiewski, Graham, Groenewegen, Jackson, Kirwan, Leiter, Marek, Maslach, Munzenrider, Pines, Ramirez, Schaufeli, Sixma	Increased acceptance of MBI as golden standard for measuring burnout, over 6,000 papers published. A third of studies carried out in healthcare sector (other large sectors include education, management and police and correction). Burnout found to be common in the human services, especially healthcare.

2000s	As 1980s and 1990s	Continuation of 1990s research
Late 2000s, 2010s	Maslach, Leiter, Schaufeli, Bakker, Demerouti (shift towards engagement) Caplan, Linzer, Taylor, Vedsted predominantly publish in medical journals.	Shift of focus towards engagement by leading authors. Studies with a focus on burnout remain to be published in profession specific journals.

In their research, Cooper et al. (2001) provide an overview of the emergence of the concept of burnout in the social sciences research. In the late 1970s and the early 1980s, burnout research focussed on the concept of burnout itself. In these years several definitions of burnout were proposed (cf. also Section 2.2.3, p. 20) and the academic discourse focussed on what was, and what was not, part of the burnout syndrome. At that time, burnout research was done exclusively in the context of the human services. In the first half of the 1980s a great number of empirical studies were carried out, still all within the context of the human services. The work of Maslach and her colleagues (e.g. Maslach 1982, Maslach and Jackson 1981) was key in the acceptance of the three-component conceptualisation of burnout, as described by O'Driscoll and Cooper (1996).

The concept of burnout was not accepted easily by the scientific establishment. Schaufeli et al. (2009) describe how the fact that the term burnout actually arose from practice, and not from science, contributed to the initial rejection of the concept of burnout as "pop psychology" for over half a decade. In the mid-1980s burnout became increasingly en vogue as a concept and a psychological syndrome. Schaufeli et al. (2009) estimate, that in the 1980s and 1990s over 6,000 scientific articles were published on the topic.

Like it took many years for burnout to become an established concept by the field of science, it took many years for the syndrome to become accepted by the medical field. Bianchi et al. (2015) note that it took until the 10th edition of

the International Classification of Diseases (ICD), published in 1992, two decades after the initial scientific publications on burnout, for burnout to gain recognition as a formal disease.

Although the vast majority of burnout studies focus on human services, with a particular emphasis on medical practice, burnout prevalence in other industries has increasingly been examined over the years (Schaufeli and Enzmann 1998). Schaufeli and Enzmann (1998) have estimated that one in three burnout studies were carried out in the healthcare sector and one in four in teaching and education. They identify social work, administration and management as well as police and prisons as other relatively large sectors.

While in the 1980's and the 1990's the vast majority of studies were published in journals in the fields of psychology and organisational behaviour, the 21st century studies on burnout are predominantly published in profession specific journals. Examples of recent studies on physician burnout that are published in medical journals are Taylor et al. (2005), Linzer et al. (2009), Caplan (2013) and Vedsted et al. (2013), who published in the Lancet, the Annals of Internal Medicine, the British Medical Journal, and the International Journal of Family Medicine respectively.

For other professions, one can observe a similar change in the dissemination route. Studies on teacher burnout nowadays seem to be predominantly published in field specific journals such as Teaching and Teacher Education (e.g. Fernet et al. 2012, Van Droogenbroek et al. 2014), and the Journal of Educational Psychology (e.g. Collie et al. 2012). In all these publications, neither the concept of burnout or its associated measurement instrument, the MBI, are the object of study, Most studies published in the last two decades, use the MBI without further investigation of the measurement instrument itself, but focus on factors that are associated with increased burnout scores instead.

The other stream can be seen as the further development of the field of burnout science, which consists of studies of a more fundamental nature. The focus of research, however, has shifted towards employee engagement, as illustrated in Figure 2-1 below.

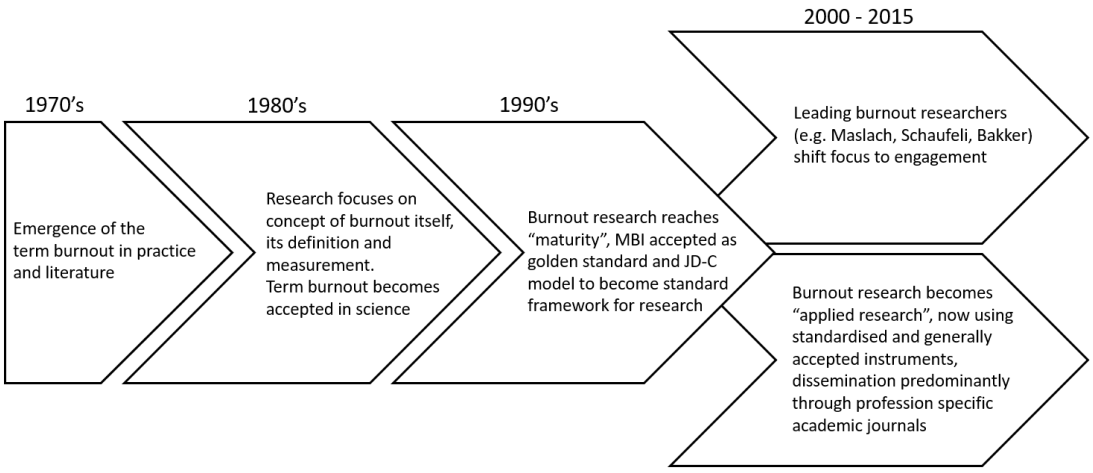

Figure 2-1: Stages in burnout research

Yousef-Morgan and Bockorny (2014, p. 36) note that 'positive psychology' significantly influenced burnout research. In the second half of the 20th century, psychology was based on a disease model, fixing weaknesses, and business psychology and HR-studies followed suit. Studies on negative job aspects such as poor performance, stress and burnout, work-life conflict, counterproductive work behaviours prevailed over studies that examined good or successful behaviour. Human strengths were ignored and studies on human strengths were underfunded (Seligman and Csikszentmihalyi 2000). This has led Luthans (2002a, 2002b) and others to plea for a shift towards positive psychology.

Near the end of the 20th century, briefly before the 'formal' plea for a shift towards positive psychology, Maslach et al. (1997) hypothesised that burnout and work engagement were two opposite poles in the same continuum. In the past fifteen years, employee engagement has gained increasing momentum. Several researchers that can be identified as the founders of burnout research, were now researching burnout in conjunction with

engagement or engagement instead of burnout (Bakker et al. 2008, Maslach and Leiter 2008, Schaufeli and Bakker 2010, Schaufeli 2014). In fact, Schaufeli had transformed the Utrecht Burnout Scale to become the Utrecht Work Engagement Scale. This scale does not measure emotional exhaustion, depersonalisation and reduced accomplishment, but vigour, dedication and absorption instead (Schaufeli et al. 2002). To measure vigour, dedication and absorption, the same or similar questions as used in the MBI are used, now phrased in a positive manner, e.g. “At my work I feel bursting with energy” instead of “I feel emotionally drained from my work”. There is, however, no consensus amongst researchers, how burnout and engagement relate to one another. Maslach et al. (1997) have adopted the so-called burnout antithesis approach, defining burnout and engagement as the positive and negative endpoints of a single continuum, while Schaufeli et al. (2002) define engagement as a distinct concept in its own right, albeit that it is negatively related to burnout. Schaufeli et al. (2002) define work engagement as “a positive, fulfilling, work related state of mind that is characterized by vigour, dedication, and absorption” (Schaufeli 2014, p. 18). Some researchers argue that engagement is old wine in new bottles, a rebranding of the burnout construct (e.g. Jeung 2011).

While the focus of the ‘big names in burnout research’ (e.g. Maslach, Schaufeli, Bakker and Demerouti) seems to shift from burnout to engagement, the ‘traditional’ physician burnout studies keep being carried out, nowadays published predominantly in medical journals

For this study, a choice had to be made between following the latest developments in burnout research, measuring engagement instead of burnout, or using the well-established concept of burnout instead of the relatively new concept of engagement. Considering:

a) that one of the aims of this study is to provide a repeat measure of burnout prevalence amongst Dutch GPs, (cf. Section 1.3, p. 7),

b) that there is a well-established relationship between high burnout scores and adverse effects (cf. Section 2.4.5, p. 47) and

c) that burnout remains to be a relevant concept as evidenced by numerous publications in the last decade,

the choice was made to not follow the leading researchers by using the concept of resilience, but to use the well-established concept of burnout instead.

2.2.3 Definitions of burnout, burnout as a state or a process

In the literature, burnout is defined both as a state and as a process. Although all researchers agree that burnout gradually develops over time, researchers have opposing views on how burnout develops. The development of burnout was predominantly researched in the 1980s. In Table 2-2 below the different viewpoints are summarised.

Table 2-2: Findings on the development of burnout as reported in the extant literature (chronological)

Researcher	Main findings
Chernis (1980)	Burnout is a process of disengagement in response to job-related stressors. Imbalance between job demands and employee's resources leads to changes in attitudes and behaviour.
Golembiewski et al. (1983)	Development of burnout as a consecutive increase in one of the three components of burnout (Golembiewski Phase Model of Burnout). Depersonalisation as first manifestation.
Maslach and Jackson (1986)	Burnout as a state / result of process (combination of emotional exhaustion and depersonalisation with reduced professional accomplishment)
Leiter and Maslach (1988)	Burnout development starts with emotional exhaustion, depersonalisation is coping mechanism.

Schaufeli and Enzmann (1998)	Limited and contradictory evidence for Golembiewski's (1983) and Leiter and Maslach's (1988) viewpoint. Burnout does develop over time, but which dimension develops first (exhaustion or depersonalisation) is unknown.
Cooper et al. (2001)	Insufficient evidence to determine what dimension worsens first.
Schaufeli (2009)	Most burnout research is cross-sectional, which is an impediment for determining how burnout develops.

Chernis (1980), one of the first authors that describe the process of burnout development, describes burnout as a process of disengagement in response to job-related stressors. Imbalance between job demands and the employee's resources (cf. also Section 2.3.5, p. 33), leads to an emotional response that brings forth changes in the individual attitudes and behaviour, including defensive coping (gratifying one's own needs) and depersonalisation.

Golembiewski, however, describes the process of burnout development as a consecutive increase in one of the three burnout components proposed by Freudenberger (1974) and Maslach (Pines and Maslach 1978). Golembievski's frequently cited model (Golembiewski et al. 1983, Golembiewski and Munzenrider 1984), that later became known as the Golembiewski Phase Model of Burnout, describes how depersonalisation is the first manifestation of burnout. The then recognised discrepancy between one's own behaviour and the high professional standards, leads to a reduced sense of personal achievement. The combination of increasing depersonalisation and the reduced sense of accomplishment leads to emotional exhaustion.

Leiter and Maslach (1988) propose a process model that is almost the mirror image of the Golembiewski Phase model of Burnout. Leiter and Maslach propose that the development of burnout starts with emotional exhaustion as a consequence of continued stressful interpersonal contact with clients, co-workers or supervisors. Depersonalisation emerges as a coping strategy to

deal with the emotional exhaustion. As depersonalisation occurs, the professional begins to develop a sense of reduced accomplishment (Leiter and Maslach 1988).

As described by Cooper et al. (2001) and Schaufeli and Enzmann (1998) there is some, but contradictory, empirical support for both development models. Schaufeli et al. (2009) point out, that the vast majority of burnout research is cross-sectional as opposed to longitudinal, which would be a requirement for definitive proof of one or the other sequences of occurrence of phenomena. What both process definitions have in common, however, is the fact that burnout does not occur suddenly. In neither process models, emotional exhaustion, depersonalisation and reduced accomplishment occur simultaneously, except for the last stage of burnout in which all three phenomena are present. Burnout is a gradual process that either starts with emotional exhaustion (Leiter and Maslach 1988) or starts with depersonalisation (Golembiewski et al. 1983, Golembiewski and Munzenrider 1984) as a response to continued exposure work related stressors.

In the definition cited in Section 2.2.1 (p. 14) by Maslach (1993) burnout was described as a syndrome that encompasses three elements: emotional exhaustion, depersonalisation and reduced accomplishment. In this definition the term burnout does not refer to the process, but rather to the outcome of the process. The concise definition as provided by Maslach and Jackson (1986) on the first page of the second edition of the Maslach Burnout Inventory manual appears to be one of the most frequently cited definitions:

> *"Burnout is a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind."* (Maslach and Jackson 1986, p. 1)

21st century studies (e.g. Vedsted et al. 2013, Orton et al. 2012, Lee et al. 2008) generally refer to the abovementioned definition as provided in the Maslach Burnout Inventory manual by Maslach and Jackson (1986, 1981) or its later edition (Maslach et al. 1996). In this thesis, this definition is adopted as well. Where the term burnout is used in this thesis, a combination of emotional exhaustion, depersonalisation and reduced professional accomplishment is referred to. It is this triad that provides the core of the empirical model that is used in this study.

2.2.4 Measuring burnout: the Maslach Burnout Inventory

In the late 1970s and 1980 a wide variety of instruments were developed to measure burnout. As an example thereof, Schaufeli and Enzmann (1998) mention the Freudenberger Burnout Inventory (FBI) as an initially frequently used instrument that was, however, to be discarded because of insufficient validation. Other examples of instruments that ware initially used but proved to be insufficiently reliable are the Perceptual Job Burnout Inventory (PJBI), the Staff Burnout Scale for Health Professionals (SBS-HP) and the Burnout Measure (BM) (Schaufeli and Enzmann 1998).

Schaufeli and Enzmann (1998) identify the Maslach Burnout Inventory as the instrument of choice to measure burnout. Not only is the MBI the most frequently used, but after its initial introduction, it was adjusted slightly several times to improve consistency and it has been tested times and again with good results on its psychometric properties (internal consistency, test-retest reliability, factorial validity and construct validity). A key element in the MBI is that the outcome is not one ‘burnout score’ but three different scores on the three dimension of burnout (Schaufeli and Enzmann 1998). According to Schaufeli et al. (2009), the MBI is the most widely used instrument which has become the golden standard for measuring burnout. Schaufeli et al. (2009) estimate that 90% of all published studies use the MBI.

The MBI was initially developed in the late 1970s on the basis of interviews held by Christina Maslach and her associates among physicians, nurses and mental health professionals. The group of interviewees later expanded to other professions such as lawyers, teachers, law enforcement officers and penitentiary guards. Emotional exhaustion and depersonalisation were two themes that clearly emerged from the interviews. A factor analysis of the answers to the questions in the 'pilot version' of the MBI showed that there was a third theme. This later became known as reduced accomplishment or reduced efficacy (Maslach and Schaufeli 1993). The developers have experimented with some other themes over the initial years of research, such as reduced self-esteem, but these elements proved to have insufficient methodological strengths (internal consistency, test-retest reliability) and disappeared again from the questionnaire (Schaufeli and Van Dierendonck 2000).

Schaufeli and Van Dierendonck (2000) describe the development of the MBI. The MBI was initially developed in the United States in three variations: the MBO-HSS (Human Services Survey), the MBI-ES (Educators Survey) and the MBI-GS (General Survey). The MBI-HSS and the MBI-ES are very similar. They only differ in wording (e.g. pupils instead of patients). The MBI-GS is a more generic survey that does not refer to s specific professional context. The MBI-GS is shorter than the MBI-ES and the MBI-HSS. Over the years, the MBI was tested in different countries. Schaufeli and Van Dierendonck (2000) report that sometimes questions 'did not work' in a specific country and that a cultural adaptation was required, either in wording, or by deleting or adding a specific question. For this reason, Schaufeli and Van Dierendonck (2000) hold the view that it would be better not to speak of 'the MBI', suggesting that there is one single inventory, but to speak of a family of inventories instead.

In the Netherlands, the MBI is known as the Utrecht Burnout Scale (UBOS), referring to Utrecht University, where Schaufeli works as professor of Work

and Organisational Psychology. Like in the United Sates, three different versions of the MBI (UBOS) exist in the Netherlands: one for contact intensive professions, particularly healthcare (the UBOS-C), one for Teachers (UBOS-L) and one generic survey (UBOS-A).

Considering that the vast majority of studies make use of the MBI (Schaufeli et al. 2009), and considering the availability of a validated Dutch version for the healthcare sector (UBOS-C), for this study the choice was made to measure the level of burnout amongst general practitioners using the UBOS-C survey. In the UBOS manual, Schaufeli and Van Dierendonck (2000) list 29 studies, amongst a total of over 13,333 participants in different professions, that were used to validate the survey and to provide reference values for interpreting burnout scores. Reference values are available for general practitioners.

In the UBOS-C, the three dimensions of burnout are measured by 20 statements, for which the participant is asked to indicate how often the statement is true for him or her on a seven-point scale, ranging from never to daily. Emotional exhaustion is measured by eight statements such as “I feel emotionally drained from my work” and “I feel tired when I get up in the morning and have to face another day at work”. Depersonalisation is measured by five statements, such as “I feel I treat some patients too impersonally” and “I don’t really care what happens to some patients”. Professional accomplishment is measured by seven statements, such as “I feel I am positively influencing other peoples’ live through my job” and “I deal effectively with the problems of patients”. For each of the three dimensions, the score is determined by calculating the average score for the questions relating to that dimension. All questions of the UBOS-C can be found in appendix II (p. 237).

2.2.5 Summary of Section 2.2

In this section, an overview was provided of the emergence and development of burnout science. Furthermore, the concept of burnout, its definitions and its measurement were explored. In Section 2.2.1, the emergence of the concept of three-component-nature of burnout was identified. In this study, the triad of emotional exhaustion, depersonalisation and reduced professional efficacy is adopted. In Section 2.2.2, it was described, how several of the founding burnout researchers are shifting their attention towards engagement, while others keep performing burnout research. The choice for not following the trend towards engagement research was motivated in this section. Section 2.2.3 presented several definitions of burnout and a choice for a specific definition of burnout that is used in this study was made. In the subsequent section the measurement of burnout was discussed and the choice for using a specific measurement instrument for this study (the UBOS-C) was justified.

2.3 Possible explanations for burnout

2.3.1 Introduction

There are two main theories which explain the occurrence of burnout, they are 1) Equity Theory, supported by the work of Van Dierendonck (1994) and Bakker et al. (2000, 2001) and 2) the ‘family’ of demands and resources theories, supported by the work of Demerouti et al. (2001) and Schaufeli (2014), as discussed in the forthcoming sections.

2.3.2 Burnout and equity theory

Several studies on burnout in the healthcare context point out that the relationship between healthcare providers and their patients is “asymmetrical”: caregivers feel that they continuously put more into relationships with their patients than they receive back. An explanation for the high prevalence of burnout (cf. also Section 2.4.5, p. 47) might, at least to

some extent, be provided by equity theory. Adams (1963, 1965) postulated that people evaluate their relationship with other people in terms of cost, investments, profit and rewards. Adams stated that the presence of inequity will motivate a person to achieve equity or reduce inequity, and that the strength of motivation to do so will vary directly with the amount of inequity. This line of reasoning became known as equity theory. Walster et al. (1978) elaborated on Adams' postulates, by going as far as developing mathematical equations to calculate the level of (in)equity in a relationship and to develop response strategies, dependent of the level of inequity.

Roter and Hall (1991) suggest that the relationship between the caregiver and the recipient of care is in its nature inequitable. The physician is supposed to provide care and give attention at the best of his or her ability. The recipient of care and attention cannot be forced to express gratitude, to comply with recommendations or to balance the equation in any other way. The compensations as suggested by Walster et al. (1978), e.g. to demand for increase of compensation, have no place in the context of healthcare relationships. Van Dierendonck et al. (1994) argue that a physician who experiences a lack of reciprocity in the relationship is likely to use a psychological strategy to obtain equity, e.g. by developing negative attitudes towards patients. Callous, cynical and impersonal attitudes, Van Dierendonck et al. (1994) point out, are a symptom of the burnout syndrome.

Empirical evidence appears to support the hypothesis that a lack of reciprocity plays a role in the development of depersonalisation. Van Dierendonck et al. (1994) have empirically investigated equity as a (partial) explanation for burnout in healthcare professionals. The results of their study on burnout among general practitioners provide support for the hypothesis that the inequity of the doctor-patient relationship plays a role in developing burnout. Additional support for this theory is found by Van Yperen (1992) and Bakker (2000, 2001).

Although the abovementioned authors (Van Yperen 1992, Van Dierendonck et al. 1994, Bakker 2000, 2001) provide support for the postulate that the occurrence of burnout can at least partly be ascribed to the inequitable nature of the relationship between the caregiver and the patient, this theory does not provide potential solutions for reducing burnout. The inequity of the relationship caregiver-patient is therefore not included in the model that is used in this study.

2.3.3 The Demand-Control (Support) model

In the same period in which the field of burnout research developed, the late 1970s and 1980s, the influence of job demands on experienced work-stress was investigated widely. As will be discussed in this section, it was theorised, that job characteristics and one's experience of the job was associated with higher or lower levels of work related stress. Since job characteristics can be altered, and therefore potentially provide a solution for the reduction of job-stress and burnout, these theories are explore in greater detail.

In burnout literature, Karasek's Demand-Control model (Karasek 1979) and its derivatives, are frequently referred to in the burnout literature. In the Demand-Control (DC) model, depicted in Figure 2-2 below, Robert Karasek (1979) proposes that having a demanding job itself is not a source of job-related stress as long as the worker has a high level of control over his or her work.

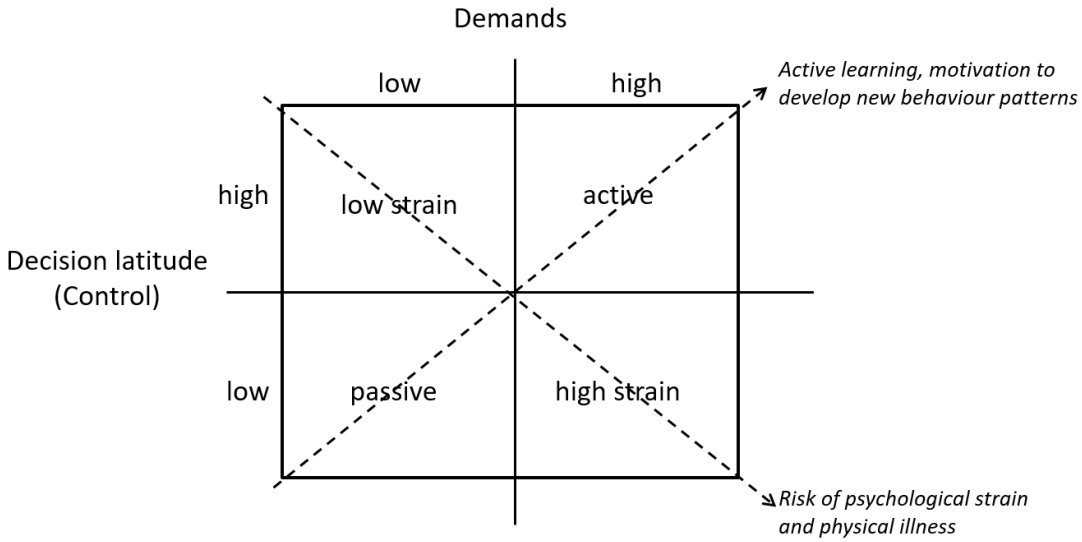

Figure 2-2: The Demand-Control model (Karasek 1979)

If the worker has control over his or her job, the worker can develop a successful coping strategy. The high demands motivate the worker to develop new behaviour patterns through active learning. He or she consciously experiments with strategies to cope with the demands of the job. The worker needs to have considerable decision latitude to design his or her own work and working patterns in order to be successful. The combination of high demands and low control, however, creates high levels of strain. The lack of decision latitude inhibits the worker to find effective strategies and he or she cannot adapt his or her working patterns to meet the high demands. Instead, the worker will react internally. He or she is now exposed to psychological strain and, according to Karasek, even at risk of physical illness.

For the measurement of the factors ‘demand’ and ‘control’ Karasek developed the so-called Job Content Questionnaire (JCQ). The JCQ provided standardised measures that quantified the two factors to enable statistical analysis and comparison of study outcomes. As will be illustrated in Section 2.4.4 (p. 43), there is a vast amount of evidence that for physicians the level of control over one’s work is strongly associated with the development of burnout.

In the 1980s, Karasek's DC model became increasingly en vogue and several researchers elaborated on the model. An example thereof is the expansion of the theoretic framework by Johnson and Hall (1988), who proposed that the outcome of the Demands-Control balance was influenced by the presence of social support or the lack thereof as illustrated in Figure 2-3 below. Johnson and Hall renamed the model the Demand Control Support Model (DCS or JDCS).

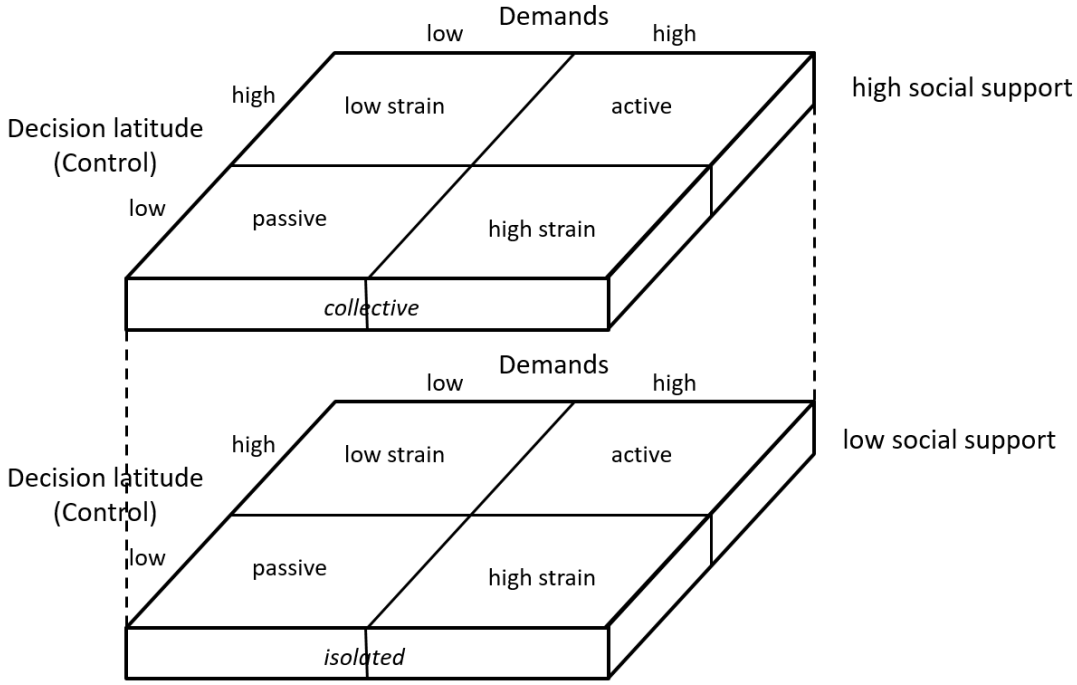

Figure 2-3: The Demand Control Support Model (Johnson and Hall 1988)

2.3.4 The Job demands-Resources (JD-R) model

Demerouti et al. (2001) argue, that the DC model and the DCS model have too narrow a scope. For example, a worker has more potential resources than support and decision latitude. They argued that e.g. feedback or job security could be treated in a similar fashion. Furthermore, that what constitutes 'demands' differs for different type of jobs. Demerouti et al. (2001) advocated a more generic and flexible model, in which, dependent on the type of job, the demands and resources could differ. They identified several

types of demands, such as time pressure, physical environment or shift work (Demerouti et al. 2001). This model, named the Job demands-Resources (JD-R) model is of particular interest in the context of burnout research, since both demands and resources appear to have an effect on other facets of burnout. As hypothesised by Demerouti et al. (2001), high demands lead to exhaustion, whilst a scarcity of resources predominantly leads to disengagement, as illustrated in Figure 2-4 below.

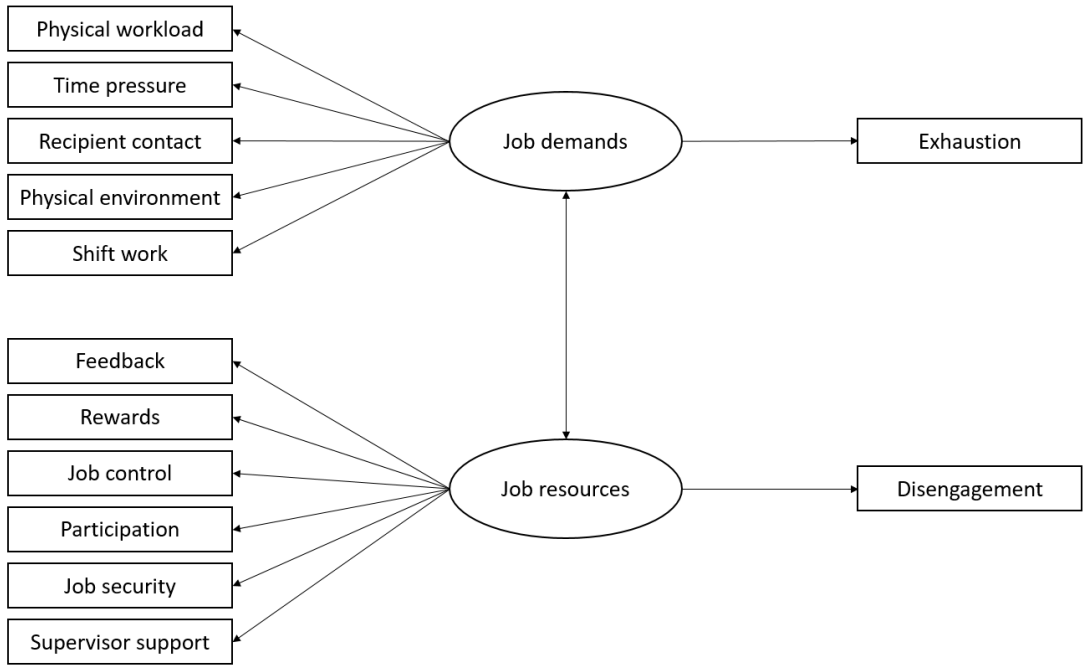

Figure 2-4: The Job demands-Resources model (Demerouti et al. 2001)

The Demand Control (Support) models and the JD-R model clearly differ. In the JD-R model, control has a much less central role and is treated as one of the many potential resources, as is support. Furthermore, the JD-R model includes the different role that demands and resources play. Demerouti et al. (2001) present their model as an expansion of the DC(S) model:

> *"The model clearly expands earlier models such as the job demands-control model (Karasek, 1979) and the demand-control-support model (Johnson & Hall, 1988)"* (Demerouti et al. 2001, p. 510)

The shift of focus of burnout researchers from burnout to engagement (cf. Section 2.2.2, p. 18) has led to an alteration of the JD-R model as proposed by Schaufeli (2014, p. 26). In this version of the model, resources (both job resources and personal resources) positively influence work engagement and reduce burnout, while job demands reduce work engagement and increase burnout. The outcomes are determined by the balance between engagement and burnout. This newer JD-R model is presented in Figure 2-5 below.

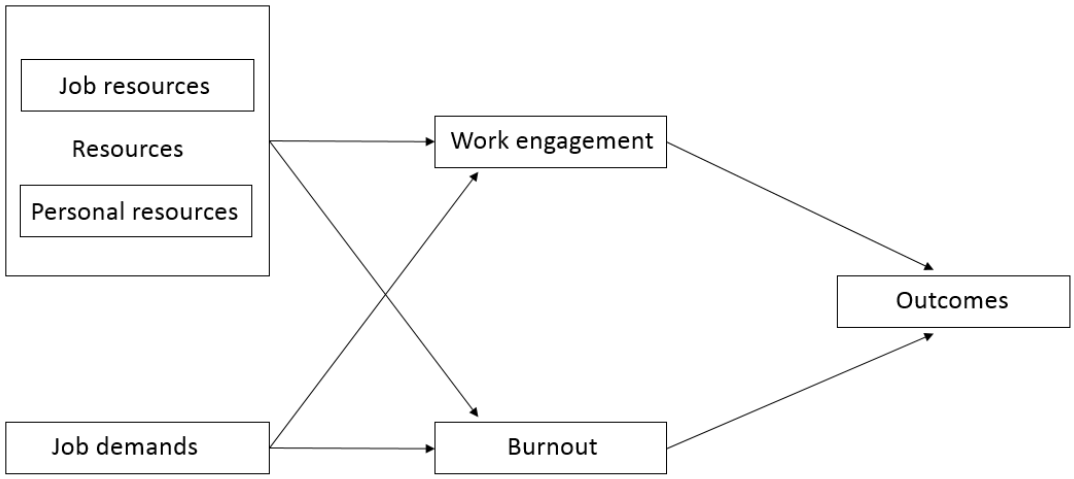

Figure 2-5: The job demands-resources model including engagement (Schaufeli 2014)

Another novel element that is introduced in the 2014 version of the JD-R is the role that personal resources play. Schaufeli (2014) proposes that the levels of engagement and burnout are not only influenced by the availability or job resources (or the lack thereof), but that they are influenced by personal resources as well.

Along with the continued development of the different models, Karasek's JCQ included more factors contributing to demands and resources. Although initially developed as an instrument to support research within the DC-model, the JCQ has broadened over time. Newer versions of the JCQ also include social support. The JCQ in its current (2006) version includes measures for

decision latitude, psychological demands, social support, physical demands and job insecurity. The JCQ is translated in 22 languages and has become one of the standard methods for measuring demands and resources (University of Massachusetts 2015). Many of the studies cited in the nest section made use of the JCQ or a variation on the questionnaire.

2.3.5 Demand-Control / Demands-Resources and burnout

Both the Demand Control (Support) model and the Job demands Resources model, or variations thereon, are frequently used in burnout studies in the healthcare context. Table 2-3 below provides an overview of studies on physician burnout using the Demand Control (Support) model or the Job demands Resources model, carried out in the last two decades.

Table 2-3 Overview of studies researching physician burnout using DC or JD-R model as theoretic framework.

Year	Authors	Setting	Main findings
1997	Graham and Ramirez	UK hospital physicians	Increased control over work associated with a reduced stress level
2000	Sundquist and Johansson	Swedish GPs	Low control and high job demands associated with high job strain
2001	Freeborn	US HMO physicians	Control over work environment most important predictor for all three dimensions of burnout
2001	LeBlanc et al.	Dutch oncology care providers	Emotional job demands important predictor for burnout
2001	Peeters and LeBlanc	Dutch oncology care providers	Organisational demands and lack of collegiate support contribute to emotional exhaustion
2002	Hoff et al.	US hospital physicians	Level of support from colleagues most important predictor for burnout
2004	Vanagas and Bihari-Axelsson	Lithuanian GPs	The combination of a high patient load with low decision latitude most important predictor of work strain
2005	Goehring et al.	Swiss primary care physicians	Workload and patient demands among the most important predictors of burnout.
2006	Ozyurt et al.	Turkish physicians	Number of shifts (job demands) contributes to all three dimensions of burnout
2007	Keeton et al.	US gynaecologist	Control over work schedule and work hours most important predictor for burnout

2008	Houkes et al.	Dutch GPs	Empirical support for the JD-R model, autonomy and support can be measured as part of 'resources'
2008	Lee et al.	Canadian GPs	Feeling of being unsupported, especially in combination with the feeling of having to abide by rules and regulations (low control) important source of burnout.
2009	Leiter et al.	Canadian GPs	Workload important predictor for emotional exhaustion an cynicism
2010	Shackelton et al.	US, UK and German primary care physicians	Clear association between work stress and experienced lack of professional autonomy.
2015	Conijn et al.	Dutch medical students	Evidence for the association between demands (e.g. emotional strain) and resources (e.g. autonomy, feedback, collegiate support) and increased / decreased burnout scores.

In Section 2.4, more recent studies investigating the role of demands and resources are discussed (e.g. Leiter 2014, who found workload to be an important job demand). These studies, however, do not explicitly use one of the models discussed in this section and are, therefore, not included in Table 2-3.

Several of the studies mentioned in Table 2-3 use the JCQ, sometimes with their own additions such as home support or alterations such as distinguishing between support from supervisors and support from colleagues, or with alterations in wording to make the JCQ fit their specific research context.

As indicated in Table 2-3, all studies confirmed the general principle of the DC and JD-R models. There is however limited evidence in these studies for the hypothesis made by Demerouti et al (2001), that high demands lead to exhaustion, while a scarcity of resources predominantly leads to disengagement. In fact, several studies contradict this hypothesis. Peeters and LeBlanc (2001) found the organisational demands and a lack of support from colleagues both to contribute to emotional exhaustion. Ozyurt et al. (2006) found the number of shifts to contribute to all three dimensions of

burnout and Leiter et al. (2009) found that workload was an important predictor for both exhaustion and cynicism.

In 2005 Taris et al. published a comparison between many different occupations in the Netherlands. Taris et al. found that GPs score the lowest on job control of all occupations studied and had the second highest exhaustion levels of all studied professions in the country (second only to penitentiary guards). Possibly, the vast amount of rules and regulations that GPs need to comply with explains why GPs experience their autonomy as very limited (Leiter 2009), more limited than X-ray technicians, penitentiary guards or military police (Taris et al. 2005).

2.3.6 Summary of Section 2.3

In this section several explanations for increased job stress and burnout were discussed: equity theory (Section 2.3.2, p. 26), Demand-Control (Support) (Section 2.3.3, p.28), and Job demands-Resources (Section 2.3.4, p. 30). The role that demands and resources play has been studied extensively in the context of physician burnout as discussed in Section 2.3.5 (p. 33). The extensive amount of evidence for the role of demands and resources has led to the decision to include demands and resources in the empirical model used in this study and to explore the role of demands and resources in the context of Dutch GPs.

The evidence for the different roles that demands and resources play as hypothesised by Demerouti (2011) in inconclusive as discussed in Section 2.3.5. Examining a potential difference in the role of demands and researchers is therefore included in the research objectives of this study.

The most recent demands and resources models include resources outside of the job (e.g. family support), which has led to the decision to include this in the empirical model for this study as well. Furthermore, the JCQ was identified as a frequently used instrument to measure demands and resources. This has led to the decision to use this widely used instrument to measure demands and resources in this study.

2.4 Physician burnout

2.4.1 Introduction

This section focusses on burnout among physicians. This section begins with the introduction of alternative conceptual models which examine this phenomenon after which the interrelation between burnout and job satisfaction is explored. After a discussion of factors that are associated with physician job-stress and burnout this section continues to discuss the effects, the onset and the prevalence of physician burnout. At the end of this section burnout among Dutch GPs is discussed.

2.4.2 Alternative conceptual models

There are two renowned studies which look at causes and effects of the level of satisfaction and job stress / burnout among physicians simultaneously. These are 1) the Physician Worklife Study (Williams et al. 2002) and 2) the MEMO Study (Linzer et al. 2005). Both studies are frequently referred to in studies published since and thereby, based on their use, have become theoretical frameworks on their own merit. The Physician Worklife Study formed the basis of research by e.g. Vanagas and Bihari-Axelsson (2005), Solomon (2008), Karsh et al. (2010), Tyssen et al. (2013), Weigl et al. (2013), Alidina et al. (2014) and Ky (2014). The MEMO study conceptual framework was used as a theoretic framework for research undertaken by e.g. Mechaber et al. (2008), An et al. (2013) and Babbott et al. (2014). Both studies will be discussed separately below.

Physician Worklife Study

A central hypothesis in the Physician Worklife Study is that physician characteristics, practice characteristics and possibly patient characteristics have an influence on job satisfaction and on the level of perceived stress simultaneously. At the same time, stress itself will influence job satisfaction. Both job satisfaction and perceived stress are hypothesised to influence the physician's physical and mental health. This constellation of relationships is depicted in Figure 2-6 below.

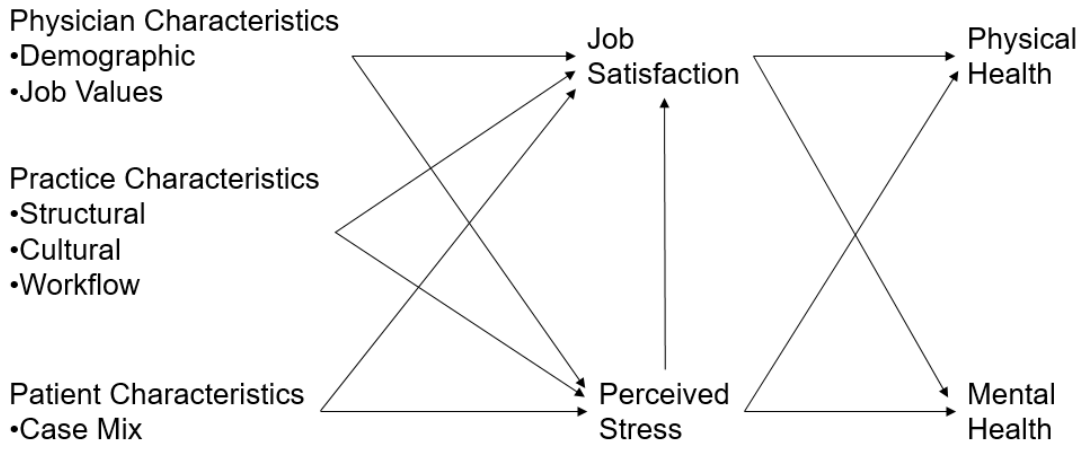

Figure 2-6: The conceptual framework of the Physician Worklife Study (Williams et al. 2002)

The conceptual model of the Physician Worklife Study was developed on the basis of theoretical models presented by Lazarus and Folkman (1984) and Ivancevich and Matteson (1980). Lazarus and Folkman (1984) describe stress as a troubled relationship between the person and the environment in which environmental demands exceed one's resources. If this takes place, both short term and long term physiological and emotional reactions occur. Ivancevich and Matteson (1980) have developed a four stage model, consisting of antecedents (stressors), stress, outcomes and consequences. Although the Physician Worklife Study model does not include the consequences stage of Ivancevich and Matteson, their model is

acknowledged by the researchers of the Physician Worklife Study as one of the fundaments on which the study is built.

The Physician Worklife Study is a large scale empirical study, based on a survey amongst 5,000 US physicians nationwide. For the Physician Worklife Study, a special questionnaire that was developed in the second half of the 1990s was used: The Physician Worklife Survey (PWS). The PWS provides a standardised instrument that could also be used by other researchers in order to have a golden standard for examining both job satisfaction and perceived stress simultaneously. The PWS was found to be a good, but rather time consuming instruments, e.g. for the measurement of job satisfaction the PWS contains 36 items (Williams et al. 1999).

The conceptual model of the Physician Worklife Study was tested using structural equation modelling. The model as a whole was confirmed in the study, although not all hypothesised relationships were as strong as initially hypothesised. Practice and to a lesser extent physician characteristics influence job satisfaction, but only practice characteristics significantly influence job stress. (Williams et al. 2002).

With the Physician Worklife Study, Williams et al. (2002) have provided a firm fundament for the research of the association between physician, practice and patient characteristics on one hand and perceived stress on the other. The subdivision of physician, practice and patient characteristics was adopted in developing the empirical model for this study.

MEMO

The inclusion of consequences explains the name of the study: MEMO is an acronym for 'Minimizing Error Maximizing Outcome' (Linzer et al. 2005). The theoretic framework for the MEMO study is depicted in Figure 2-7 below.

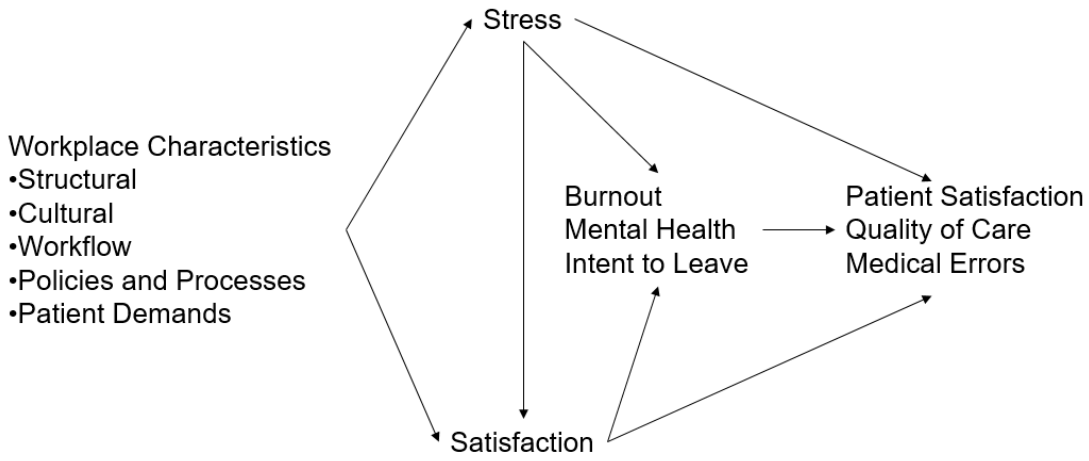

Figure 2-7: The MEMO study conceptual model (Linzer et al. 2005)

Although the theoretic framework of the Physician Worklife Study and the MEMO study are quite similar, there are three important differences. Firstly, the MEMO study focuses on the impact of the organisational climate, so only workplace characteristics are part of the theoretical framework. Secondly, the MEMO study focuses exclusively on primary care. Thirdly, the MEMO study does encompass both outcomes and consequences. It is hypothesised that both stress and satisfaction not only have an impact on the physician (development of burnout, mental health, intent to leave the profession) but on the patient as well. The MEMO study is among the first studies worldwide that put the saying "a happy doctor is a better doctor" to the test, in that it asks questions such as do stressed out physicians provide lower quality care, have less satisfied patients and even make more medical errors?

Throughout the first decade of this century results from the MEMO study were published. In 2005, Linzer et al. found that more than one in four physicians noted burnout symptoms. One in three physicians said they were

at least moderately likely to leave the profession. As factors associated with burnout Linzer et al. identified amongst others age, gender, work hours, work control and inadequate resources. Two years later, Williams et al. (2007) found that stressed, burned out and dissatisfied physicians do report a greater likelihood of making errors and more frequent instances of suboptimal patient care. This conclusion, however, was based on physician self-assessment and self-reported likelihood of making errors. In 2009 Linzer et al. published the long awaited study on the relationship between stress and medical errors. This time, medical errors were measured by making an analysis of patient charts. Linzer et al. concluded that adverse work conditions are associated with adverse physician reactions, but that no consistent associations were seen between adverse physician reactions and the quality of care.

To date still no hard evidence exists that stressed out or unsatisfied physicians make more medical errors. Research indicates that patients are less satisfied (Haas et al. 2000, Weng et al. 2011, Mache et al. 2012) and less compliant with therapy (DiMatteo et al. 1993), if the physician's well-being is at stake, but other than suboptimal communication, effects on quality of care have not yet been empirically established (Grembowski et al 2005). In their systematic review of the impact of physicians' occupational well-being on the quality of care, Scheepers et al. (2015) conclude that improved physicians' occupational well-being contributes to patient satisfaction and interpersonal aspects of care. Scheepers et al. (2015) were not able to identify a similar relationship between the physicians' occupational well-being and the patients' health.

Despite the lack of conclusive evidence for the association between physician wellbeing and patients’ health, the findings of the MEMO study do warrant further investigation of physician wellbeing. Furthermore, the MEMO study has identified physician and job characteristics (such as age, gender, work hours and work control) factor that are of potential relevance for this

study. The characteristics that were identified by Linzer er al. (2005) are included in the empirical model of this study.

2.4.3 Burnout and job satisfaction

In the previous section, two examples of studies that examined burnout in conjunction with job satisfaction were discussed (Williams et al. 2002, Linzer et al. 2005). In the first decade of the 21st century, several other studies were carried out that looked at job satisfaction and job stress or burnout simultaneously.

As demonstrated in Section 2.2.3 (p. 20), in burnout research a more or less generally accepted definition of burnout emerged (emotional exhaustion in conjunction with depersonalisation and reduced professional efficacy) and a golden standard for measuring burnout (the Maslach Burnout Inventory) was adopted. In the job satisfaction literature many different definitions of job satisfaction and instruments for measuring job satisfaction are used. Despite this lack of consensus regarding definition and measurement, 'job satisfaction' is a widely used term.

In their study of Dutch and US physicians, Linzer et al. (2001) concluded that job satisfaction was negatively correlated with feelings of burn-out. This finding was replicated in several other studies. Soler et al. (2008) found that high MBI scores were associated with low job satisfaction and Keeton et al. (2007) also noted the strong association between burnout and job satisfaction.

Linzer et al. (2001) quantified the association between satisfaction and burnout and have found correlation coefficients of -0.34 and -0.28 for the US and the Netherlands respectively. Not only is the correlation significant, a large amount of variation in burnout can be ascribed to variation in

satisfaction. In conjunction with the variables work/home interference and stress, variation in (aspects of) satisfaction can explain a significant amount of burnout variation. These findings are consistent with the strong associations identified by other researchers (Freeborn 2001, Doan-Wiggins et al. 1995, Gallery et al. 1992).

There are however, differences in the models to explain the association between the two. Some researchers concluded that the same or similar factors influence job satisfaction and job stress or burnout. An example thereof is provided by Scheurer et al. (2009), who found that job satisfaction was dependent of job demands, job control and collegiate support, much like demands, control and support influence job-stress. Other researchers (e.g. Visser et al. 2003) explain physician burnout by the combination of high stress and low job satisfaction. While Keeton et al. (2007) conclude, that measures of burnout strongly predict career satisfaction.

However the mechanisms might work, job satisfaction and job stress influenced by the same factors, or job stress as a cause of low satisfaction, or – the other way around – low job satisfaction as a cause for burnout, it is important to identify what factors influence physician job satisfaction, since the same or similar factors might be of importance for job stress and physician burnout.

In addition to the previously mentioned elements of the DC-model as found by Keeton et al. (2007) and Scheurer et al. (2009), the following factors are mentioned in the literature. Van Ham et al. (2006) found that increased job satisfaction was associated with diversity of work, a good relationship with colleagues, and being involved in teaching medical students. Decreased job satisfaction was associated with a low income, too many working hours, administrative burdens, a heavy workload, lack of time and lack of recognition. McMurray et al. (2000) found autonomy and relationships with

patients to be the most important determinants of job satisfaction. Machaber et al. (2008) found that part-time physicians to have a higher job satisfaction, to experience less stress, to have lesser intention to leave practice, to experience a greater control over one's work and to score lower on the MBI.

It appears, that job satisfaction and job stress or even burnout are two sides of the same coin. However, this does not imply that physician job satisfaction is low. Although many physicians experience very high levels of job stress, as will be discussed in greater detail in Section 2.4.7 (p. 52), and although job satisfaction is negatively correlated with job stress (e.g. Cooper et al. 1989, Linzer et al. 2001, Keeton et al. 2007), the vast majority of studies conclude the level of job satisfaction among physicians is high (e.g. Freeborn et al. 2001, Van Ham et al. 2006, Mechaber et al. 2008).

In this section, it was established that many factors that are associated with physician job satisfaction are also associated with physician job stress and burnout. In order to identify relevant characteristics, there appears to be little need to investigate both job satisfaction and job stress or burnout. Considering also the absence of a golden standard for measuring job satisfaction, and the lack of a concise measuring instrument, as discussed in this section, it was decided that no questions inquiring about job satisfaction were included in the survey for this study.

2.4.4 Factors associated with physician job-stress and burnout

In Section 2.3.5 (p. 33) job demands, control and support were identified as important factors that are associated with job-stress and burnout. In the last 15 years a great number of studies are published that specifically address factors associated with physician burnout or job-stress. Table 2-4 below provides an overview of findings of these studies.

Table 2-4 Overview of published findings on factors that are associated with physician job-stress and physician burnout.

Year	Authors	Setting	Main findings
1995	Kirwan and Armstrong	UK GPs	Part-time GPs report lower levels of burnout than full-time GPs. There is a small but significant negative relationship between age and depersonalisation.
2000	McMurray et al.	US primary and non-surgical specialty physicians	Women more frequently report burnout than men.
2001	Linzer et al.	US and Dutch medical specialists	Work-home interference and experienced job-stress are important mediating variables in the level of feeling burned out
2002	Linzer et al.	US and Dutch medical specialists	US female physicians experience more burnout than US male physicians. In the Netherlands no gender difference is found.
2003	Visser et al.	Dutch medical specialists	Burnout explained by combination of high stress and low job satisfaction, rather than high stress alone. Stress associated with work-home interference, societal pressure, and impossibility to live up to one's professional standards. Job satisfaction is associated with social support, feeling poorly resourced, intellectual stimulation, and feeling valued and job security.
2004	McManus et al.	UK physicians	Personal approaches to work and personality are associated with perceived work-related stress.
2005	Goehring et al.	Swiss primary care practitioners	High burnout scores are associated with male sex, practising in a rural area, stress due to excessive workload, patients' expectations, difficult relations with non-medical staff, and balance professional / private life.
2005	Linzer et al.	US physicians	A chaotic office atmosphere is an important source for stress.
2007	Keeton et al.	US physicians	Control over schedule and work hours are the most important predictors of work-life balance and burnout.
2008	Brøndt et al.	Danish GPs	Not being a member of a continued medical education group is associated with double the likelihood of burnout.
2009	Dusmesnil et al.	French GPs	Dealing with long working hours on a weekly basis, high levels of mental strain, managing palliative care, unrealistic patients' expectations, work-home conflicts, having one's abilities questioned by patients, confronting judicial situations, and legal cases or living with a partner, are all associated with one or several dimensions of burnout.

2009	O'Connel et al.	US gynaecologists	The shorter the amount of time allotted to see new patients, the higher the percentage of physicians reporting burnout.
2012	Orton et al.	UK GPs	Males score higher on depersonalisation than females. GPs working in a group practice score higher on depersonalisation than GPs working in a single handed practice.
2013	Dyrbye et al.	US hospital physicians	Mid-career physicians are more likely to get burned out. Especially emotional exhaustion scores high mid-career. Depersonalisation occurs most among early career physicians.
2013	Vedsted et al.	Danish GPs	GPs with walk in open access have a higher likelihood of suffering from burnout.

Already back in 1995, Kirwan and Armstrong noted that part-time GPs showed lower levels of burnout than their fulltime colleagues. Kirwan and Armstrong also noticed a small, but significant, negative relationship between age and depersonalisation (Kirwan and Armstrong 1995).

The influence of workload or hours worked per week has been confirmed by several other studies (e.g. Dusmesnil et al. 2009, Keeton et al. 2007). The association between age and / or career stage and specific dimensions of burnout was also confirmed by several other studies. Dyrbye et al. (2013) concluded that mid-career physicians were more likely to get burned out. They specifically found the level of emotional exhaustion to be high in mid-career physicians, while depersonalisation especially seems to occur in early career physicians. This last finding is in accordance with the finding of Kirwan and Armstrong (1995). McManus et al. (2002) theorise that depersonalisation is a defence mechanism that lowers stress levels.

At the same time McManus et al. (2002) assert, that stress causes emotional exhaustion and that high levels of emotional exhaustion in turn are a new cause of stress. McManus et al. (2002) report a gradual increase in depersonalisation over the years, followed by a decrease, after a peak that occurs mid-career. No definitive explanation is provided as to why depersonalisation decreases again over time. The literature provides no

definitive explanation as to why burnout scores are associated with age and career stage.

Several researchers have noted that scores on MBI subscales were different for male and female physicians, but the evidence for the influence of gender is inconclusive and sometimes even contradictory as can be seen in Table 2-4 (p. 44).

Work-home conflicts are identified as an important factor by several studies (Linzer et al. 2001, Visser et al. 2003, Keeton et al. 2007, Dusmesnil et al. 2009, Dyrbye et al. 2013). In addition to the previously mentioned factors that are addressed in a number of studies, there is a wide variety of factors that are found to be associated with job-stress or burnout and that are identified in one or just a few studies, such as societal pressure and the impossibility to live up to one's professional standards (Visser et al. 2003), a chaotic office atmosphere (Linzer et al. 2005), personality (McManus et al 2004), managing palliative care, unrealistic patients' expectations, having one's abilities questioned by patients and confronting judicial situations (Dusmesnil et al. 2009).

Other factors that are identified in the literature as being of relevance for physicians are: 1) (not) being a member of a continued medical education group (Brøndt et al. 2008); 2) time allotted to see new patients (O'Connel et al. 2009) and, for GPs particularly: 3) having a walk-in open access (Vedsted et al. 2013) and 4) working in a rural area (Goehring et al. 2005).

In this section, the extant literature on the physician's personal and job related characteristics, that are associated with high stress levels and increased burnout scores, was discussed. The identification of relevant characteristics was used in order to make decisions on the inclusion or

exclusion of characteristics in the survey used in this study as is discussed in the subsequent chapter.

2.4.5 Physician burnout: effects, onset and prevalence

According to the extant literature, physicians who suffer from high levels of job-related stress do not function well. GPs are perceived to be the physicians who score the most negatively on the MBI subscales of emotional exhaustion, depersonalisation and professional accomplishment, and are significantly more likely to be depressed and show suicidal thinking than hospital consultants (Caplan 2013).

Key studies conducted in this area have indicated that burnout manifests itself in a number of tangible and intangible outputs, e.g. suboptimal care and medical errors (Shanafelt 2002, Linzer et al. 2005) as well as lower patient satisfaction (Rathert 2008). When developing burnout, physicians deliberately conceal their problems (Handerson et al. 2012). Once they have taken a leave of absence, physicians describe a lack of support from colleagues and a fear for a negative response when returned to work (Handerson et al. 2012). Handerson et al. (2012, p. 1) note that "Self-stigmatising views, which possibly emerge from the belief that 'doctors are invincible', represent a major obstacle to doctors returning to work".

Physician burnout is associated with psychiatric problems and drug or alcohol abuse (Doan-Wiggins et al. 1995, Shanafelt et al. 2002, Soler et al. 2008). Caplan (2013) found that one in four GPs scored borderline depressed or were likely to be depressed and one in eight had suicidal thoughts. Many studies found an association between high levels of stress and / or burnout and the intent to leave the profession (Gallery et al. 1992, Doan-Wiggins et al. 1995, Linzer et al. 2005, Soler et al. 2008). Dyrbye et al. (2013) conclude that burnout appears to play an important role in early retirement.

Research suggests that the development of burnout starts very early in the physician's medical career. Shanafelt et al. (2002) concluded that burnout is common among medical residents (physicians in training to become medical specialists). In their systematic literature review on resident burnout, Prins et al. (2007) also conclude that burnout is prevalent in medical residents, but that it is hard to quantify the prevalence of this phenomenon. According to Prins et al. (2007), prevalence estimations in the literature vary from 18% to as much as 82%. Prins et al. (2010), reporting on findings from the Netherlands, estimate that one in five residents suffers from moderate to severe burnout.

Some authors conclude that, in the Netherlands, the development of burnout can start as early as in medical school (Conijn et al. 2015, Venrooij et al. 2015). This finding is consistent with findings in other countries (Dyrbye et al. 2005, Prinz et al. 2012). The literature does not provide a clear rationale for this very early onset of burnout among aspiring physicians.

One of the first studies that quantified the occurrence of physician burnout was published approximately 20 years ago. Doan-Wiggins et al. (1995), found that one in four US emergency medicine physicians stated that they felt burned out. More than one in five US emergency physicians expressed intent to leave the medical profession entirely within five years.

Ramirez et al. (1996) found that, dependent of the medical speciality, high scores on emotional exhaustion ranged from one in four to in one three among hospital consultants. High depersonalisation scores ranged from one in five to one in four physicians and low accomplishment from one in three to one in two hospital consultants.

Linzer et al. (2001) concluded that in both the US and in the Netherlands approximately one in five GPs experiences feelings of burnout a few times or

more per month. In another study, Linzer et al. (2005) concluded that one in four GPs noted burnout symptoms and that one in three were at least moderately likely to leave the job.

In a study on Danish GPs, Brøndt et al (2008) found the prevalence of burnout to be approximately 25%. 3% of Danish GPs suffered from severe burnout. Soler el al. (2008) concluded that burnout is a common problem in GPs across Europe, while Orton et al. (2012) found high levels of emotional exhaustion in 46% of British GPs, high levels of depersonalisation in 42%, and low levels of professional accomplishment in 34% of British GPs. Shanafelt et al. (2012) concluded that burnout was more common among physicians than among any other group of US workers. Shanafelt et al. (2012) found especially physicians in the front line of care access to be at greater risk.

In the last decade several studies addressed to topic of physician mental health. Taylor et al. (2005) found that the proportion of British hospital consultants with psychiatric morbidity rose from 27% in 1994 to 32% in 2002. They also noted a rise in emotional exhaustion from 32% to 41%. Taylor et al. explain the increase in exhaustion and morbidity by an increase of job-related stress without a compensating increase in job satisfaction.

Charlton et al. (2009) found the suicide rate in the UK for medical practitioners to be twice the national average. Van Schaik et al. (2010) conclude that in the case of substance abuse or depression, job stressors might contribute to physician suicide. Physicians, especially female physicians, have a significantly increased suicide risk.

Although the estimates differ, all authors agree that physician burnout is a problem. In a systematic literature review, McCray et al. (2008) conclude that physician burnout is a serious problem, especially considering that few

interventions exist to combat the problem. To date, there is still little evidence for the effectiveness of interventions to combat burnout (Hassink-Franke 2016).

In this section, the extant literature on the prevalence, onset and consequences was discussed. The high prevalence of physician burnout, together with the seriousness of its consequences, underline the importance of the research topic of this study.

2.4.6 Burnout among Dutch GPs

Burnout among Dutch GPs has been the object of study several times in the past two decades. Table 2-5 below summarises the main findings of these studies. The studies are discussed in greater detail after the table.

Table 2-5: Findings of previous studies on Dutch GP burnout

Year	Authors	Main findings	Remarks
1992, 1994	Van Dierendonck et al.	Dutch GPs score high on emotional exhaustion and depersonalisation and low on accomplishment.	Study also served as validation of UBOS-C
2001	Bakker et al.	Working with emotionally exhausted or depersonalised colleagues increases one's own burnout scores.	
2003	Engels et al.	The workload of GPs has decreased between 1997 and 2002 by half an hour as result of the introduction of regional GP clinics and delegation of tasks to support staff	
2008	Twellaar et al.	GP burnout scores are twice as high as among general Dutch working population. Burnout scores have slightly improved since the 1990s. This improvement is explained by organisational changes (e.g. fewer house calls)	Data collected in 2002

2008	Laurant et al.	The introduction of new GP support staff has not led to a reduction of the GP's workload.	Not a study on burnout but evaluation of new support staff. Not published in academic journal.
2008	Houkes et al.	A high workload is associated with emotional exhaustion. Gender differences in burnout scores were found. The JD-R model was validated.	Data collected in 2002 and 2004
2012	Movir / Duchatteau and Schmidt	70% of all GPs report having noted burnout symptoms, 15% report having been burned out. Burnout is a taboo amongst GPs.	Results published in commercial report and professional journal only. Study did not use MBI or other validated instrument.

The first time GP burnout was investigated in the Netherlands, was in the early 1990's. This study was a joint initiative from the National Association of General Practitioners (LHV) and the Netherlands Institute for Health Services Research (Nivel) (Van Dierendonck et al. 1992, 1994). Van Dierendonck et al. (1992, 1994) found that GPs scored high on emotional exhaustion and depersonalisation (higher than nurses) and low on professional accomplishment (lower than nurses). In their study, Van Dierendonck et al. explain these scores using equity theory as discussed in Section 2.3.2 (p. 26). These 1990's studies also served as validation for the newly developed Dutch healthcare version of the MBI, the Utrecht Burnout Scale for Client intensive occupations (UBOS-C).

In 2008 Twellaar et al. published a study on burnout among Dutch GPs based on a survey held in 2002 (Twellaar et al. 2008). Twellaar et al. (2008) found that levels of burnout had actually decreased since the 1990s research (lower scores on emotional exhaustion and depersonalisation and higher scores on personal accomplishment). They explain this improvement by organisational changes: fewer house calls and more telephone consultations. This explanation is corroborated by Engels et al. (2003) who found that between 1997 and 2002 the average workload of the GP has decreased by approximately half an hour per week as a result of the introduction of regional

‘GP clinics’ for evening-, night- and weekend-hours, delegation of tasks to support staff and an increase in the number of GPs. Although the MBI scores found by Twellaar et al. (2008) were improved, burnout levels among GPs were still twice as high as among the general working population in the Netherlands.

Laurant et al. (2008) report that in 1999, a new type of support staff was introduced in the general practice. In addition to the regular assistant (lower vocational education), the practice nurse (higher vocational education) was introduced to take over many tasks from the GP in the care for the chronically ill, especially patients with diabetes, COPD/asthma and cardiovascular diseases. An evaluation published in 2008, demonstrated that the practice nurse contributed to the quality of care, but that the introduction of the practice nurse has not led to a decrease of the GP’s workload (Laurant et al. 2008).

Houkes et al. (2008) validated the Job demands-Resources (JD-R) model (cf. also Section 2.3.4, p. 30) in the context of GP burnout in the Netherlands. Houkes et al. (2008) found ‘work-family-interference’ to be as important as job demands. Houkes et al. suggest that ‘demands’ should be interpreted broader than ‘*job demands*’. A high workload contributes to emotional exhaustion directly, but also indirectly: a high workload leads to work-family-interference which itself contributes to emotional exhaustion.

In 2012, a survey among 3,000 Dutch GPs on job satisfaction and job-stress found that only one in three GPs work fulltime. On average, GPs work four days a week. The average working week, however, is 48 hours, making the average working day last 12 hours (Duchatteau and Schmidt 2012, Movir 2012). Job-stress was found to be significantly correlated to the amount of hours worked per week as was the type of employment. 70% of all GPs reported having noted burnout symptoms in themselves. 15% of GPs

reported to have actually been burned out. One in three GPs would consider ignoring burnout symptoms as a coping strategy. More than half the respondents characterised burnout as a taboo subject among GPs (Duchatteau and Schmidt 2012, Movir 2012).

Considering that the MBI was used in the Netherlands twice before this study (1992 and 2002 / 2004), using the MBI in this study provides an opportunity to investigate changes over time. As discussed in Chapter 1, general practice care underwent many changes in the past decade. A repeat measure provides the opportunity to investigate the effects of these changes on Dutch GPs' burnout levels.

The JD-R model was validated in context of Dutch GPs, which has led to the decision to make use of element of this model in this study. Furthermore, the suggestion made by Houkes et al. (2008), to look broader than the job itself, was adopted for this study. Family circumstances were included in the survey by incorporating questions regarding family support (a resource) and work-family-interference (a demand).

In Section 2.4.4 (p. 43) the international literature on the association between physician, practice and patient characteristics on one hand and burnout scores on the other was discussed. As demonstrated in this section, in which all GP burnout research in the Netherlands is discussed, such research has so far not been carried out in the Netherlands. This provides a rationale to include variables that are found to be relevant in the international literature, in the empirical model for this study, in order to establish to what extent these variables are also relevant in the context of Dutch GPs.

2.4.7 Summary of Section 2.4

In this section the literature on physician burnout was discussed. Physician burnout has frequently been researched in the last 15 years. Several studies indicate that stressed out or burned out physicians provide suboptimal care. Evidence is found for reduced patient satisfaction and patient compliance when physicians are burned out, but no hard evidence exists for a relationship between burnout and medical errors.

The association between personal and work characteristics on one hand and physician burnout on the other has been researched frequently. Relevant personal characteristics are gender, age, home support and work-family conflict. Relevant work related characteristics are amount of hours worked, workload, co-worker support, practice location, relations with support staff, office atmosphere, control over schedule, patients' expectations, time allotted to see patients and having a walk in open access.

Physician burnout is associated with poor mental health, psychiatric illness (depression, alcohol abuse, suicide) and with intent to leave the profession. Prevalence estimations vary, but all studies agree that the prevalence of physician burnout is relatively high. In the Netherlands, burnout scores of GPs are twice as high as among the general Dutch working population. Studies indicate that burnout scores improved slightly between 1992 and 2002. In a 2012 survey 70% of all Dutch GPs report having noted burnout symptoms, 15% report having actually been burned out in the past.

2.5 Summary and identification of research gap

In this chapter the literature on (physician) burnout was discussed. In Section 2.2 (p. 13) the concept of burnout was explored. Most researchers have adopted Maslach's definition of burnout as a syndrome consisting of three dimensions: emotional exhaustion, depersonalisation and reduced

professional efficacy. This is the definition that is adopted for this study. The Maslach Burnout Inventory was identified as a golden standard for measuring burnout, which lead to the decision to use the MBI as a measurement instrument in this study as well. Although the focus of the seminal authors in burnout research has shifted toward engagement research, burnout research continues to be carried out by many researchers. The decision to not follow the trend towards engagement, but to focus on burnout instead was justified in this section.

In Section 2.3 (p. 26), several possible explanations for the development of burnout were discussed. The demands and resources models were identified as commonly used in burnout research, which informed the decision to include elements of the demands and resources models in the empirical model for this study. The Job Content Questionnaire was identified as the most frequently used instrument to measure the presence or absence of job demands and the availability of resources, which led to the decision to use this instrument in this study as well.

Section 2.4 (p. 36) focussed on the literature on burnout amongst physicians. In this section several frequently used theoretical frameworks, particularly the frameworks of the Physician Worklife Study and the MEMO study, were discussed. Elements of these models are introduced in the empirical model of this study. In this section, it was established that physician burnout is a serious problem. Burnout is common amongst physicians, especially amongst those working in the frontline of healthcare. Particularly GPs are at risk for burnout. Although prevalence estimations vary, all researchers agree that burnout is a common problem amongst physicians. Several studies indicate that burned out physician provide suboptimal care. Furthermore, physician burnout is associated with reduced job satisfaction, poor mental health, psychiatric illness (depression alcohol abuse, suicide) as well as intent to leave the profession. These findings underline the relevance of this study.

In the Netherlands, GP burnout has been researched in 1992 (Van Dierendonck et al. 1992, 1994), and 2002 (Houkes 2008, Twellaar et al. 2008). In both studies GP burnout scores were found to be high. A recently (2012) held survey amongst Dutch GPs revealed that 70% of GPs have noted symptoms of burnout in themselves. Furthermore, 15% report that they have actually been burned out in the past. The high rate of burnout as evidenced by recent studies suggests that GPs burnout remains to be a research topic of relevance.

Identification of the Research Gap

The extant literature suggests that GP burnout in the Netherlands remains to be a matter of concern. To address this problem it is, in addition to reliably measuring the current burnout risk for Dutch GPs, of importance to establish what job and practice characteristics are associated with high burnout scores. The international literature provides some suggestions of said characteristics (e.g. location, walk-in open access, time allotted to see patients), but these associations have so for not been established for the Dutch GP as evidenced in research studies to date (2016). In the studies in the early 1990's and in 2002, job-characteristics other than workload and hours worked per week were not studied. The extent to which job demands and resources play a role in the development of burnout for Dutch GPs is not studied previously other than the study by Houkes et al. (2008).

On the basis of the observations mentioned above the current need for research can be summarised as 1) insight in the current risk for Dutch GPs for becoming burned out; 2) insight in the personal or professional characteristics that are associated with increased burnout scores for Dutch GPs and 3) further insight in the role that demands and resources play in the development of burnout for Dutch GPs.

On the basis of these identified needs for further research the research question for this study was formulated as:

> *"To what extent are Dutch general practitioners (GPs) at risk for burnout as measured by its three dimensions (emotional exhaustion, depersonalisation and reduced professional efficacy) and to what extent can variation in the three dimensions of burnout be explained by differences in personal, professional and practice characteristics? To what extent can variation in the three dimensions of burnout be explained by job demands and resources?"*

In order to investigate the abovementioned research question, specific research objectives were formulated, as which be discussed in the subsequent chapter, Chapter 3, in which the methodology of this study is discussed.

Chapter 3 Methodology

3.1 Introduction

In this chapter, the methodology for the DBA research project presented in this thesis is described. The chapter starts with the presentation of the research question and the breakdown of the general research question in specific research objectives (Section 3.2 below). Section 3.3 (p. 59) presents the theoretic framework for this study. The general research design is described in Section 3.4 (p. 62). Before the specific methods are described, some ethical considerations related to this study are discussed in Section 3.5 (p. 63). The last section of this chapter (Section 3.6, p. 65) describes the different methods used in this study, including survey design, data collection, data analysis and the measures that were taken to address identified ethical issues for this study.

3.2 Research question and research objectives

In the last section of the previous chapter, the relevance of this study was justified and the need for further research was identified. Based on this research need, the following research question was formulated:

> *"To what extent are Dutch general practitioners (GPs) at risk for burnout as measured by its three dimensions (emotional exhaustion, depersonalisation and reduced professional efficacy) and to what extent can variation in the three dimensions of burnout be explained by differences in personal, professional and practice characteristics? To what extent can variation in the three dimensions of burnout be explained by job demands and resources?"*

In order to answer the above stated research question, five specific research objectives are formulated. These research objectives are listed below:

1. To assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy, the three dimensions of burnout, in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout.
2. To determine to what extent personal, professional, and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy.
3. To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in job experience.
4. To identify specific groups within the profession that are at risk for burnout.
5. To propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs.

3.3 Theoretical framework

The theoretical framework for this study is based on two 'families of models'. The first is the Job demands Resources model (Demerouti et al. 2001, Schaufeli 2014) that was discussed in Section 2.3.4 and presented in Figures 2-4 (p. 30) and 2-5 (p. 32). The second is the model as used in the Physician Worklife Study (Williams et al. 2002) and the MEMO Study (Linzer et al. 2005). These models were discussed in Section 2.4.2 and presented in Figures 2-6 (p. 37) and 2-7 (p. 39) respectively.

The empirical model that is proposed for this study combines elements of both the Job demands Resources model and the MEMO and Physician Worklife Study as will be discussed below. A first characteristic of the model is the interrelation between personal and professional characteristics with the three dimension of burnout as illustrated in Figure 3-1 below.

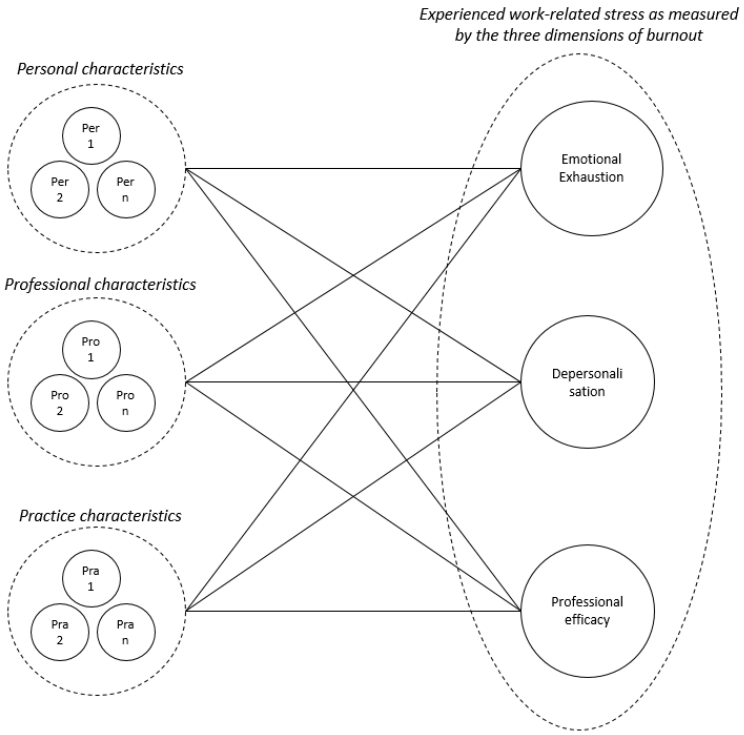

Figure 3-1: Elements of the empirical model that are based on the Physician Worklife Study and the MEMO Study

In the Physician Worklife Study three types of characteristics (physician, practice, and patient characteristics) are related to job satisfaction and perceived stress, while the MEMO Study focusses on workplace characteristics as can be seen in Figures 2-6 (p. 37) and 2-7 (p. 39). *The proposed model does not include job satisfaction and outcome measures*. Another distinction between the proposed model and the Physician Worklife Study and the MEMO model is that the proposed model focuses on burnout as measured by its three dimensions. The specific variables that are included in the study as personal, professional and practice characteristics are discussed in further detail in Section 3.6.1 (p. 68).

While the Physician Worklife Study and the MEMO Study consider mental health / burnout as the result of both job satisfaction and stress as can be seen in Figures 2-6 (p. 37) and 2-7 (p. 39), the proposed empirical model makes use of the Job demands Resources model to explain variation in

burnout scores. Adding demands and resources, results in a completed model as illustrated in Figure 3-2 below.

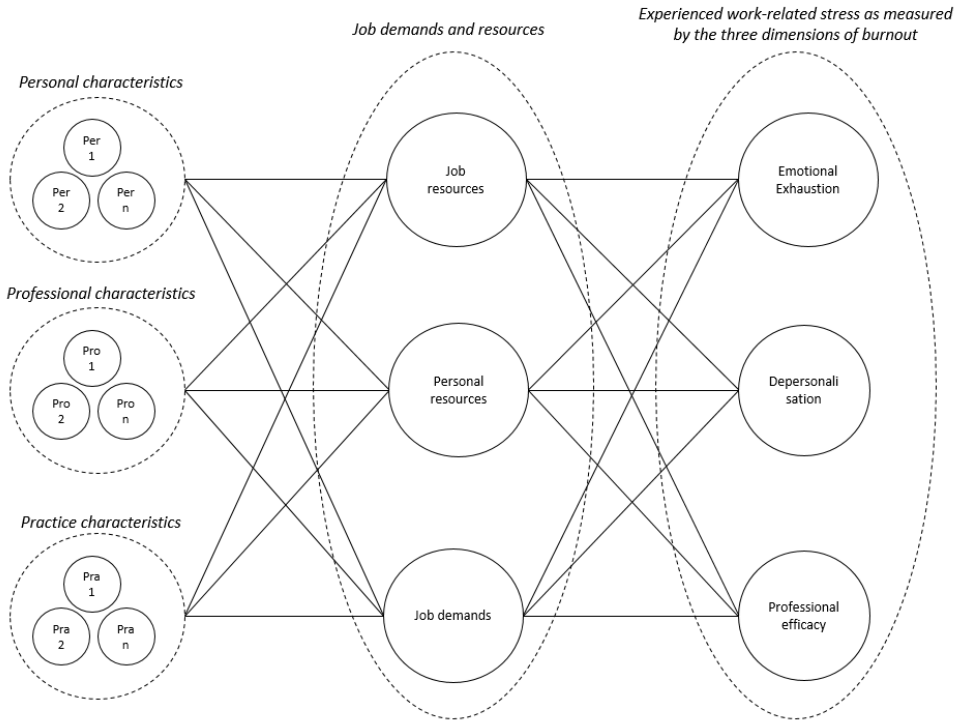

Figure 3-2: The proposed empirical model for this study

The now completed empirical model combines elements of the Physician Worklife Study and the MEMO Study on one hand, by linking a variety of characteristics to the three components of burnout, and elements of the Job demands Resources model on the other, by hypothesising that variation in the three dimensions of burnout can be ascribed to variation in specific demands or resources. This “hybrid” model enables more in-depth analysis of potential associations found between physician characteristics and burnout scores. If e.g. different burnout scores are found for GPs in solo practices and GPs in group practices, the relationships between practice type and demands and resources might provide a rationale for these differences. Do GPs in group practices experience more collegiate support than GPs in solo practices? Do GPs in solo practices experience higher levels of autonomy than GPs in group practices?

This study does not aim to validate the model as whole. The model is merely used to provide a framework for identifying possible explanations for variation in burnout scores.

The specific personal, professional and practice characteristics as well the selected demands and resources are discussed in greater detail in Section 3.6.1 (p. 68).

3.4 Research design

As reported in Chapter 2, there is an abundance of literature on (physician) burnout. Not only do validated theories and models exist, but there is also extensive literature regarding the specific variables that are of relevance. This allows for a fixed study design. In the words of Robson (2002):

> *"Fixed designs are theory driven. The only way in which we can, as a fixed design requires, specify in advance the variables to be included in our study, and the exact procedures to be followed, is by having a reasonably well articulated theory of the phenomenon we are researching."*
> (Robson 2002, p. 96).

Since this requirement is met, as established in Chapter 2, a fixed study design is appropriate for studying (physician) burnout. The study is to a large extent confirmatory in nature: using an empirical approach, hypothesised associations between variables – based on previous study outcomes – are to be refuted or accepted in the specific context of this study. In this study, the variables that are measured are not modifiable by the researcher, which characterises the design of this study as non-experimental.

In this study, measurements are made on a range of variables. Relationships between the scores on the variables are analysed. All measurements are

made over a short period of time. Based on these characteristics, one could classify this design of this study as a cross-sectional, relational design (Robson 2002, p. 156). Regarding cross-sectional, relational design studies, Robson (2002) notes that this widely used design is typically used in conjunction with the survey method (p. 156), as is the case in this study.

The characteristics of the design of this study can be summarised as: theory driven, fixed design, confirmatory, empirical, non-experimental, cross-sectional and relational, using a survey method.

3.5 Ethical considerations

Bowling (2002, pp. 156-127) states that: “the ethical principle governing research is that respondents should not be harmed as a result of participating in the research”. Bowling stresses the importance of informed consent. The information for (potential) participants should include information on the aims of the research, confidentiality, anonymity, potential risks or discomfort for the participant and their right to withdraw at any time (Bowling 2002, p. 127). In order to ensure that participants are not harmed as a result of participating in this study, two questions in particular need to be addressed. The first question relates to the research instrument itself, the second question relates to anonymity and confidentiality. Both questions are addressed separately below.

Research instrument

One of the instruments that is included in the survey is the Maslach Burnout Inventory (MBI). The MBI questions can be intrusive, especially to those who recognise themselves in the questions as being at risk for burnout. Questions like "I feel tired when I get up in the morning and have to face another day at work", " I feel like I am at the end of my tether" or "I don't really care what happens to some patients" might be confrontational to participants. Because

these questions might evoke strong emotions, participants were explicitly informed that the MBI is used as a measurement instrument to assess the level of burnout. The research instrument is specifically mentioned in the letter that was sent to potential participants. All participants, GPs, are familiar with this instrument and know the nature of the questions beforehand. They can make an informed decision to participate. In addition to mentioning the instrument in the invitation letter, a website was constructed that provided detailed information about the study. The invitation letter and the website are discussed in greater detail in Section 3.6.4 (p. 73).

Anonymity and confidentiality

The second ethical issue that needs to be addressed is the privacy of the participants. Although the survey is anonymous, it is in theory possible to identify participants, combining e.g. the ZIP-code with the age of the GP, thus linking the answers to intimate questions to an individual GP. May (2001, p. 60) states that “a researcher might, and in many cases ought, to take all possible steps to protect the identity of any person in the anticipation of any information being used for purposes other than those intended”. Given the potential sensitive nature of the questions asked in the survey, combined with the fact that the study is not fully anonymous, since the respondents’ practice ZIP-code is asked, rigorous measures to protect anonymity of the participants were taken. The specific measures are discussed in Section 3.6.5 (p. 76).

All measures addressing ethical issues regarding information provision and privacy / confidentiality were described in a research proposal that was submitted to the Humanities, Social and Health Sciences Research Ethics Panel at the University of Bradford (Ethics Application E374). After review by two independent reviewers, the Ethics Panel granted Ethics Approval in its meeting on 28 April 2014.

3.6 Methods

3.6.1 Survey development

In order to achieve the research objectives, the survey had to contain three elements: 1) an instrument to measure the participants' level of burnout, 2) an instrument to assess the participants' job experience and 3) participants' personal and practice related characteristics. Each element is discussed separately below.

1. Choice of instrument measuring burnout or engagement

A first choice that needed to be made was whether or not to follow the most recent trends in research. As discussed in Section 2.2.2 (p. 15), following the recent developments in research would imply measuring engagement instead of burnout. This would have the advantage of using a more recent instrument, following current developments in research. There would, however, be several disadvantages to this choice.

- Firstly, previous measurements in the Netherlands, in the 1990's and the early 2000's, used the Maslach Burnout Inventory. Switching to a newer instrument would imply losing the opportunity to compare findings with previous research outcomes.
- Secondly, there is no broad academic consensus on either the definition or the measurement of engagement.
- Thirdly, although the initial burnout researchers have shifted their focus of study to engagement, this does not imply that measuring burnout as such is outdated. To date, many studies are still published using the Maslach Burnout Inventory (MBI) as the main measurement instrument.

- Using the MBI has some additional advantages. There is a validated Dutch version available, the Utrecht Burnout Scale (UBOS), for which a version for the healthcare context has been developed and thoroughly validated: the UBOS-C[2], based on the Human Services Survey version of the MBI, the MBI-HSS.
- Another advantage is the availability of an abundance of benchmark data for many different professions in the Netherlands, including physicians in general and GPs in particular (Schaufeli and Van Dierendonck 2000).

Weighing the pros and cons of using the MBI, as well as considering that the MBI remains a frequently used instrument, probably still being the golden standard, the choice was made to use the MBI, specifically the UBOS-C, to measure respondents' burnout levels. The questionnaire, along with the manual that included the key to recode question answers to burnout dimension scores and the benchmark data was bought by the researcher from Pearson Assessment and Information BV. The specifics of the MBI are discussed in greater detail in Section 3.6.2. (p. 70).

2. Measuring demands and resources

Along with the introduction of the Demand-Control model, Karasek (1979) introduced a questionnaire to measure demands and resources: the Job Content Questionnaire (JCQ). Although the original Demand-Control model has since been replaced by newer models, such as the Job demands-Resources model (Demerouti 2001), as discussed in Section 2.3.4 (p. 32), the JCQ is still frequently used, albeit not in its original form. Along with identification of more relevant demands and resources, the Job Content Questionnaire was revised and updated several times to reflect recent scientific insights (University of Massachusetts 2015).

[2] The C in UBOS-C stands for Contact intensive professions (Schaufeli and Van Dierendonck 2000).

Several of the studies cited in Chapter 2 (e.g. Vanagas and Bihari-Axelsson 2004, Dusmesnil et al. 2009), use the JCQ to measure demands and resources. Shackelton et al. (2010) describe the JCQ as “a standardised, psychometrically validated questionnaires that provides reliable data” (Shackelton et al. 2010, p. 299). To date, the JCQ is used in the Netherlands by government in national surveys on working conditions (Van Zwieten et al. 2014).

The University of Massachusetts (2015) identifies the Dutch research organisation TNO as the developer and copyright owner for the validated Dutch version of the JCQ. Permission was obtained from TNO to use the Dutch JCQ in this study.

A downside of using the JCQ is, that the JCQ solely addresses job content and that it does not consider potential demands and resources outside of one’s job. In the literature, one’s private living situation is identified as a relevant factor as well. One’s family can provide support, which is considered to be a relevant resource (Linzer et al. 2001, Goehring et al. 2005). Also, the need to balance professional responsibilities with family life is identified as a potential demand (Linzer et al. 2001, Visser et al. 2003). Following the recommendation made by Demerouti et al. (2001), to interpret demands and resources in a broader sense or with more flexibility than as defined in the JCQ, a question to address home support, as well as a question to address work-home conflict, were added.

In the Netherlands, administrative burden is frequently identified as an important job demand for physicians (InEen et al. 2016) A question to measure perceived administrative burden was therefore added to the questions measuring demands and resources.

For this study, the choice was made to use a generic questionnaire, instead of a physician specific survey, such as the Physician Worklife Survey (PWS), that is mentioned in Section 2.4.2 (p. 36). The choice to not use the PWS was predominantly made based on the length of this instrument. Williams et al. (1999) describe the instrument as time consuming, which was considered to be a disadvantage for this study.

In the research question, in the research objectives and when the model was presented in Section 3.3 (p. 61) the demands and resources together were called ‘job experience’, as is often the case in the literature. Strictly speaking, this name could be challenged, since the model also includes non-job-related elements such as home support. The term ‘job experience’ is, however, still used in this thesis since this is the term that is generally used in conjunction with Karasek’s JCQ. ‘Job experience’ and ‘demands and resources’ are used interchangeably in this thesis.

3. Selecting participants’ personal and practice related characteristics

Using the results of previous studies (cf. e.g. Table 2-3, p. 33 and Table 2-4, p. 44), variables were identified that might be of relevance in the context of this study. All variables that were previously found to have an association with one or more of the three dimensions of burnout were included in the survey, except for a few variables that are of no relevance in the Dutch context (e.g. Brøndt et al. (2008) found that not participating in a continued education program was associated with increased likelihood to develop burnout, in the Netherlands, however, participating in continued education is mandatory for GPs, so this element was not included). Furthermore, some variables specific to the Dutch context were added (e.g. practice nurses and type of practice). In order to be able to assess the socio-economic status of the practice environment and the patient mix, the practice ZIP-code was asked as well. The variables that were included in the survey are listed in Table 3-1 below.

Table 3-1: Variables included in the survey

Personal characteristics	Professional characteristics	Practice characteristics
Gender Age Having a partner at home Having children who live in the participant's household Number of children under the age of six Number of children aged six or older	Position ((co)owner / salaried GP / locum GP / other) Specialisation Job-size in days per week Amount of hours worked per week Having another position in addition to working as GP Number of years of experience	Type of practice (solo / duo / group / other) Number and FTE of GPs in practice Number and FTE of assistants Number and FTE of practice nurses Average consultation time in minutes Walk-in open access (yes/no) Regional insurance company Practice ZIP-code

After the measurement instruments and the relevant variables were selected the survey as a whole could be constructed. The survey consisted of three sections[3]. In the first section the individual and practice related characteristics were asked (22 questions). The second section consisted of the UBOS-C questions (20 questions with a 7-point Likert scale for the answers, cf. next section for further details). The third section consisted of the JCQ questions with the three added questions (18 JCQ questions + 3 added questions, all with a 4-point Likert scale for the answers, cf. next section for further details).

After the survey was developed, the questions were programmed in an online environment (cf. Section 3.6.4, p. 73). Before the data collection started, the survey was piloted. Based on the pilot results, the wording of some questions was changed. The pilot study is discussed in Section 3.6.3 below. The survey questions can be found in Appendix I (questions as asked in the survey in Dutch, p. 230) and Appendix II (English translation, p. 236).

[3] As can be observed in Appendix II, the survey as administered included an additional section with open ended questions. These questions, however, fall outside of the scope of this thesis.

3.6.2 A detailed examination of the selected measurement instruments

The UBOS-C

As described previously, the UBOS-C was used to measure the level of burnout. The UBOS-C measures the three dimensions of burnout (emotional exhaustion, depersonalisation and reduced professional efficacy) by a total of 20 questions, with a 7-point Likert scale for the answers.

Emotional exhaustion is measured by eight statements that inquire about the feeling of being drained by one's work. These questions include statements like "I feel emotionally drained from my work" and "I feel like I am at the end of my tether". Depersonalisation is measured by five statements, such as "I have become more callous toward people since I took this job" and "I don't really care what happens to some patients". Professional efficacy is measured by seven statements like "I deal effectively with the problems of patients" and "I feel I am positively influencing other peoples' lives through my work". An overview of all questions is provided in Appendix II (p. 236).

For each statement the respondent is asked to state how often the statement applies to him or her. For each statement the respondent can choose between seven possible answers: never, sporadic (a few times per year or less), occasionally (one a month or less), frequently (several times per month), often (once a week), very often (several times per week) and always (daily). The answers are scored by allocating 0-6 points to the answer, in accordance with the coding provided in the survey manual (Schaufeli and Van Dierendonck 2000). The score for each dimension is determined by calculating the average score for the answers to the statements that together measure the specific dimension.

The JCQ

In the previous section, the choice for the Dutch version of the Job Content Questionnaire (JCQ) is discussed. The JCQ contains 18 questions that together measure the resources ‘Skill discretion’ (6 questions), ‘Decision authority’ (3 questions) and Co-worker support (4 questions) as well as the demand ‘Psychological job demands’ (5 questions). Skill discretion is measured by questions such as “I have the opportunity to develop my own professional skills”. Decision authority is measured by questions such as “I have a lot to say about what happens on my job”. Co-worker support is measured by questions similar to “People I work with are helpful in getting the job done”. The level of psychological job demands is measured using questions like “My job requires working very fast”.

Respondents are asked to indicate the extent to which they agree to the questions (statements). Respondents can choose between ‘strongly disagree’, ‘disagree’, ‘agree’ of ‘strongly agree’. The answers are allocated one to four points. For each demand / resource the score is calculated by adding up the answers to the questions.

As indicated in the previous section, three questions were added to include the demands ‘administrative burden’ and ‘work-home conflict’ as well as the resource home-support. These questions are “My job requires me to carry out too many administrative duties”, “My job often competes with my family life for attention and energy” and “My family provides me with a lot of support”. The same answering options as to the JCQ questions (4-point scale) were used.

3.6.3 Pilot study

On Friday, May 17 2014, after ethics approval was granted for the study, 12 GPs were requested to fill out the pilot survey online. This version of the

survey was the "final draft" of the study survey. Pilot participants were requested to comment on wording of questions (Were the questions clear?) and to comment on technical issues (Was the survey readable on different devices? Can participants give the answers they want to give in the space provided?, etc.). At the end of the survey, feedback was solicited without specific instruction. Finally, participants were asked to state the number of minutes it took them to fill out the survey (this last item was also measured by the online infrastructure, so the experienced time could be compared to the actual time).

On May 26 2014, all pilot participants had completed the survey and given feedback to the researcher (Appendix III, p. 242. An English translation of the feedback is provided in Appendix IV (p. 244). Based on the pilot participants' feedback, some changes were made to lay-out and wording. In total 12 minor amendments were made to the questionnaire, predominantly to the wording of questions or the layout. The wording of questions that are part of a validated instrument was not changed. Appendix V (p. 246) identifies the changes made in the questionnaire on the basis of pilot participant feedback.

The average self-reported time for participants to fill out the survey was 11.7 minutes. The measured average time, including the time to write feedback to the researcher, was 13.7 minutes. This information was used when writing the final version of the invitation letter. The invitation letter speaks of "10 to 15 minutes" to complete the survey. Based on the pilot study results, this was deemed to be a fair representation of the time it would cost participants to fill out the survey.

3.6.4 Data collection

For this study two types of data were collected: primary data (survey results) and secondary data that helped translate the practice ZIP-code to socio-economic and health related variables. Each is discussed separately below.

Primary data collection

With the help of the professional association LHV, an invitation letter was sent out to potential participants. There are pros and cons to this chosen method of inviting respondents. An advantage of this collaboration was a relatively easy access to up-to-date addresses of GPs. Furthermore, the LHV would provide substantial logistic support by sending out the invitation letters.

In designing the study, the choice was made to send the invitation letter on LHV stationery. It was argued, that a ‘trusted logo’ would help in getting a high response rate. Virtually all GPs are member of the professional organisation (LHV 2016b), an invitation on LHV stationery could help relay the message that the organisation who represents almost all GPs endorsed this study. Furthermore, the researcher had obtained the permission to show the LHV logo on the information website for potential participants to increase trustworthiness.

At the same time the professional association might not appeal to all potential participants in the same manner, which could potentially lead to a bias. The Movir report (2012) shows, that younger GPs are less frequently of the opinion that the LHV has a role to play in addressing the issue of GP work-stress (Movir 2012, p.23). This could lead to an overrepresentation of older GPs.

A random selection of 4,000 practising Dutch GPs were sent a letter to invite them to fill out an online survey. There are an estimated 10,850 registered

GPs in the Netherlands (Nivel 2013), of whom a little over 8,800 are actively practising (LVH 2016a). Approximately half the profession received an invitation letter.

The invitation letter, printed on LHV stationery, was sent by the LHV on Thursday September 11 2014. Approximately four weeks after the first letter was sent out, on Monday October 6 2014, a reminder letter was sent to all 4,000 GPs. Since participation was anonymous, it was not possible to only write to non-responders, therefore the entire sample was sent a reminder letter.

In the invitation letter, potential participants were informed of the voluntary nature of participation, anonymity of participants, the measures to safeguard participant anonymity and confidentiality as well as the nature of the questionnaire. Furthermore, the invitation letter contained the url of a website (http://www.huisarts2014.nl), where more detailed information about the study could be found, as to provide as much information as possible to potential participants without having to send a lengthy letter.

The website contained information on the aims of the study, the used measurements instruments, measures to protect participant privacy and confidentiality, ethics approval, research supervision and contact details of the researcher. The invitation letter in Dutch can be found in Appendix VI (p. 248), an English translation is provided in Appendix VII (p. 250). The information website (screen captures) is provided in Appendix VIII (p. 252), an English translation of the website texts is provided in Appendix IX (p. 259).

The survey was programmed on the research.net infrastructure, the “white label” section of SurveyMonkey.com. The research.net infrastructure is password protected and secured trough SSL encryption. The online environment of the survey was programmed to contain the logos of the LHV

and the university. A screen capture of the online survey can be found in Appendix X (p. 263).

The invitation letter contained the url of the survey (http://research.net/s/huisarts2014) and a password to start the survey. This password was identical for all participants, so that the answers to the questions could not be linked to an individual respondent.

On November 23 2014 the online survey was closed and the database was downloaded in an SPSS format (.sav) and prepared for analysis. Since the database contained the practice ZIP-code, additional precautions were taken to protect participants' privacy. These measures are described in further detail in Section 3.6.5 (p. 76).

Secondary data collection

The empirical model contains socio-economic and health related variables. Using the practice ZIP-codes from the survey and secondary data sources, the survey results could be linked to socio-economic and health related data. Two secondary data sources were used: 1) a database from the Netherlands Institute for Social Research (SCP) and 2) VAAM, a website made by the Netherlands Institute for Health Services Research providing supply and demand data for first line healthcare. The three sources are discussed separately below.

SCP dataset

The Netherlands Institute for Social Research (Sociaal en Cultureel Planbureau, SCP) is a government agency which conducts research into the social aspects of all areas of government policy. The main fields studied are health, welfare, social security, the labour market and education (SCP, 2014). All SCP research data is freely available to the public. A dataset

containing ZIP-codes and their associated socio-economic status scores was requested and obtained from the SCP.

VAAM

VAAM is an acronym that stands for Vraag Aanbod Analyse Monitor Eerstelijnszorg, which translates as Supply and Demand Analysis Monitor First Line Healthcare. VAAM is a publicly accessible online database that is developed by the Netherlands Institute for Health Services Research in cooperation with the Netherlands Patient Federation, the Ministry of Health, Welfare and Sport and the Regional Healthcare Support Network (Regionale Ondersteuningsstructuren Netwerk, ROS). On the website http://vaam.nivel.nl/vaam/home a plethora of healthcare supply and demand, socio-economic, and health related data can be found. Table 3-2 below lists the variables that were obtained from the three secondary data sources.

Table 3-2 Variables derived from secondary data sources

SCP	**VAAM**
Socio Economic Status Score	- number of patients with three or more chronic conditions per 1,000 inhabitants - number of patients with a bad general health per 1,000 inhabitants (as measured by the Central Bureau of Statistics on using a standardised General Health survey) - GP workload in minutes of consultation time / FTE GP / year - relative GP density in FTE GP / 1,000 inhabitants in comparison with national average

The secondary data was collected in October and November 2014. After the survey was closed on November 23, the primary and the secondary datasets were merged.

3.6.5 Measures addressing ethical considerations

In Section 3.5 (p. 63) the need for information provision to potential participants and the need for measures to protect participant privacy are

underlined. The participant information provision is described in Section 3.6.4 (p. 73). In that section also already some measures to protect participant privacy are discussed. Since the research database contained the ZIP-code, additional data handling and storage measures were required. An individual GP could theoretically still be identified by combining the practice ZIP-code with personal characteristics such as age and gender.

Immediately after downloading the database, the database was split into two separate files: one database containing only the respondent ID and the ZIP-code and another database containing all data from which the ZIP-code was deleted. The secondary data was collected in the database containing the respondent ID and the ZIP-code and afterwards copied in the main research database without copying the ZIP-codes back in. The database containing the respondent ID and the ZIP-code was stored on a USB drive and kept in a safe at the private address of the researcher. This database was deleted from the computer of the researcher and not backed up online. On the password-protected laptop of the researcher and in a password-protected and SSL-encrypted cloud backup, only the database without ZIP-codes was stored. If the laptop would be lost or stolen, and if the protective measures would be circumvented, still no data could be linked to individual participants.

The protocol for information handling and storage was contractually agreed between the researcher and the LHV. It was also agreed that no individual data would be reported in any form. This thesis or any possible subsequent publication cannot contain e.g. a vignette of “a 62 year old male GP, working in a rural practice who runs a solo practice with two assistants and one practice nurse”, since this might lead to identification of the GP involved.

Table 3-3 below lists all measures that were taken to protect the interests of study participants.

Table 3-3 Measures to protect participants' interests

Information provision	Privacy / Confidentiality
- The aim of the study was stated in the invitation letter. - The use of the MBI as a research instrument was explicitly stated in the invitation letter. - In the invitation letter as well as at the beginning of the online survey, potential participants were given an internet address where more information about the study could be found. - The internet information site contained information regarding aims of the study, the used measurements instruments, measures to protect participant privacy and confidentiality, ethics approval, research supervision and contact details of the researcher. - The voluntary nature of participation in the study was stated explicitly in the invitation letter as well as at the beginning of the online survey. - The fact that participants could stop at any time while completing the survey was stated at the beginning of the online survey. - The right of participants to reconsider their participation and to request having their data permanently deleted was stated at the beginning of the online survey.	- No GP contact details were shared with the researcher. The invitation letter was sent out by the LHV. - No record was kept on who had (not) completed the survey. A reminder was sent by the LHV to the entire group of potential participants. - No participant IP addresses were stored. - During the data collection phase, the survey data were stored in a password protected and SSL-encrypted online environment. - No contact details (with the exception of the practice ZIP-code) were asked in the survey. - The practice ZIP-code was removed from the research database and saved in a separate database that was stored physically separate from the research database and not backed up on the researcher's laptop or online. - The research database (without ZIP-codes) was stored on a password protected laptop and in a password protected and SSL-encrypted cloud backup facility. - No individual participant's responses were and are to be disclosed.

3.6.6 Data analysis

For the analysis of the data a step-by-step approach is adopted. Different elements of the empirical model are analysed separately as will be discussed in this section. The data-analysis can be broken down in two major parts. The first part of the data analysis is a descriptive analysis of the different elements of the empirical model. These findings are reported in Chapter 4 (p. 92). The second part focusses on the analysis of associations between the different elements of the model. The results of these analyses are reported in Chapter 5 (p. 110). All analyses are performed using IBM SPSS 22.0. Each step of the data analysis is discussed in greater detail below.

Preparatory step: data-cleaning

On all variables, range checks and consistency checks are carried out to ensure reliability of the data. A respondent could e.g. by accident enter his or her year of birth instead of his or her age which could lead to miscalculations. Another example of consistency check is a practice, where the respondent e.g. answers that 1.50 GPs are employed and 300 nurses. In this case the respondent clearly meant 3.00 instead of 300. In the cases where these mistakes are obvious, the entry is manually corrected. Another example of data cleaning is a check for respondents who e.g. answer all questions with ‘strongly agree’ throughout the survey.

Potentially, not all respondents answer the questions that together form the Maslach Burnout Inventory (MBI). Since the MBI underpins the majority of analyses in this study, the answers by respondents who leave the MBI questions blank are deleted from the database. For cases in which a respondent forgets to answer one or a few questions, the MBI/UBOS manual (Schaufeli and Van Dierendonck, 2000) provides clear decision rules on how many items within each subscale can be allowed to miss without endangering the reliability of the measurement.

Descriptive analysis step 1: Respondent Characteristics

In this step, the left-hand column of the model (personal, professional and practice characteristics) is examined as illustrated by Figure 3-3 below.

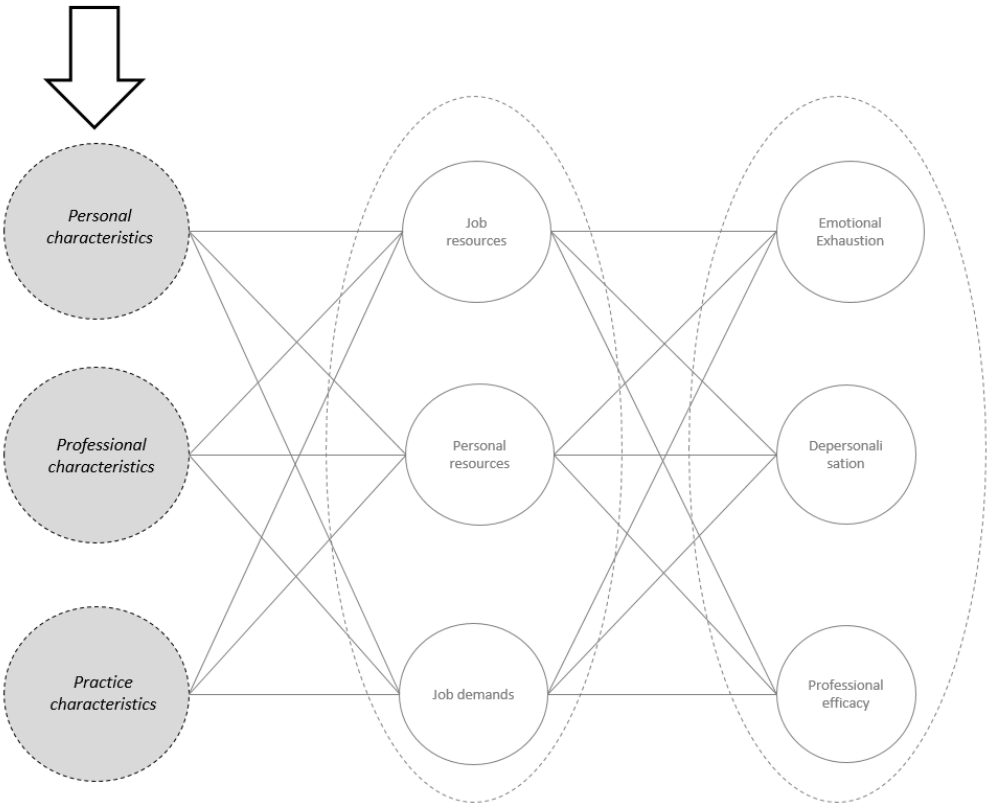

Figure 3-3: Visualisation of the part of the empirical model that is analysed in 'Descriptive analysis step 1'

The main aim of this step of the analysis is to examine the representativeness of the sample. After the response rate is established, respondent characteristics are compared to published GP characteristics (e.g. age, gender and practice type distribution) in order to establish to what extent the data set is a good representation of the profession as a whole and to identify differences between the dataset and the population in order to identify biases. The response is reported in Section 4.2 (p. 92), the respondent characteristics are reported in Section 4.3 (p. 92), and the representativeness of the sample is discussed in Section 4.4 (p. 97).

Descriptive analysis step 2: Outcome of MBI measurements

In the second step of the descriptive data analysis, the right-hand column of the model, i.e. the respondents' burnout scores as measured by the MBI, is examined as illustrated by Figure 3-4 below.

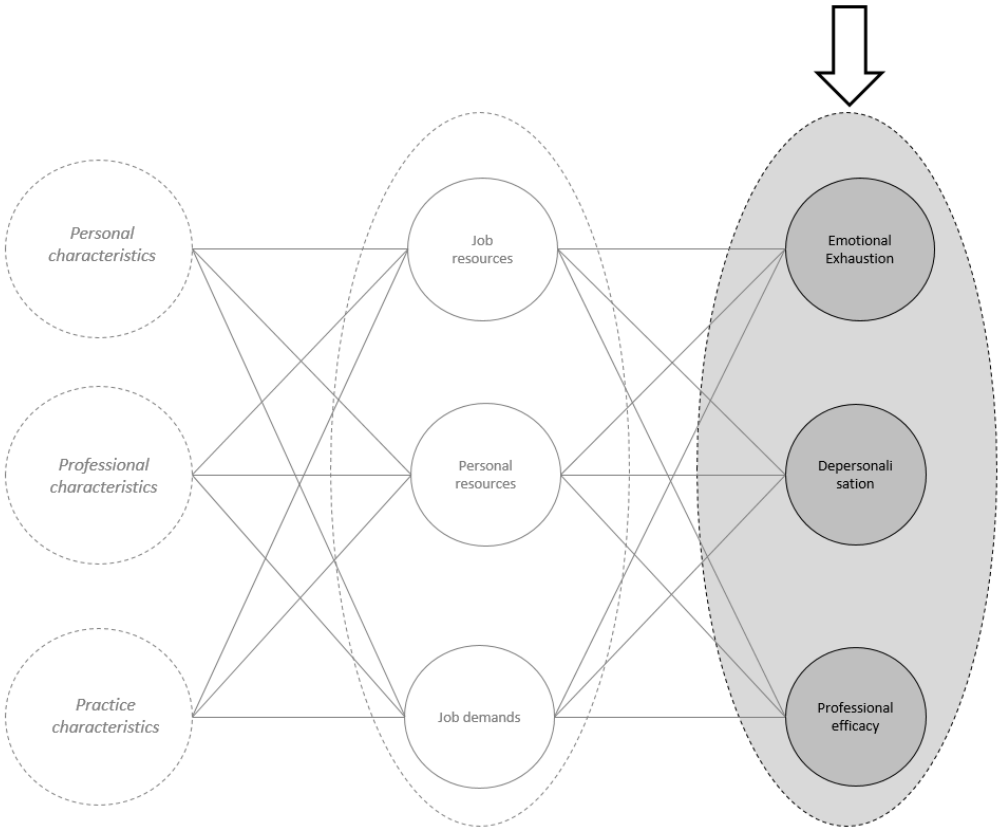

Figure 3-4: Visualisation of the part of the empirical model that is analysed in 'Descriptive analysis step 2'

The aim of this step is to address the first research objective: to assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy, the three dimensions of burnout, in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout.

For each respondent, the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy is calculated, following the instructions in the MBI/UBOS manual (Schaufeli and Van Dierendonck 2000). The findings are compared with benchmark data provided in the manual in order to

interpret the numerical values. These findings are reported in Section 4.5 (p. 100) and discussed in greater detail, also in comparison to previously published findings in Section 6.2 (p. 160).

Descriptive analysis step 3: The GP's demands and resources

In this step, the middle column of the empirical model is examined, as illustrated in Figure 3-5 below.

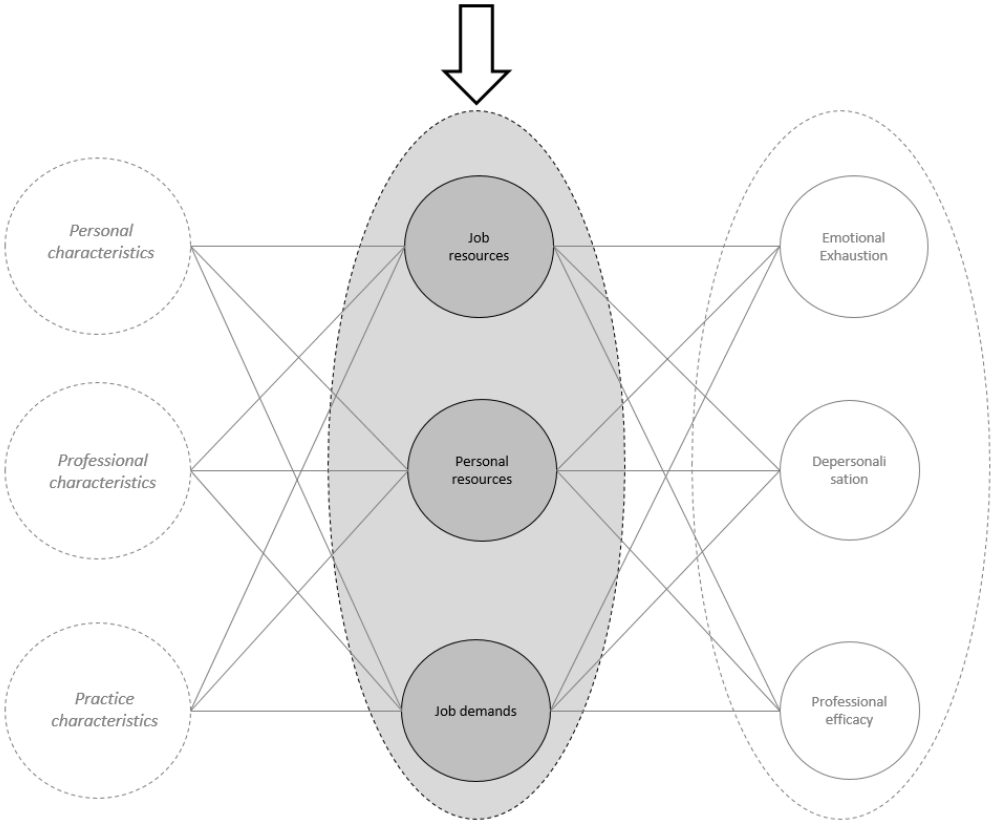

Figure 3-5: Visualisation of the part of the empirical model that is analysed in 'Descriptive analysis step 3'

Before the role of demands and resources is examined (research objective 3), the GPs' demands and resources are examined at their face value. Central questions in this part of the analysis are: 1) 'To what extent do GPs experience psychological job demands and other demands such as administrative burden and work-home conflict?' and 2) 'To what extent are resources such as decision latitude, co-worker support and home support

available for respondents?'. The findings of this part of the data analysis are reported in Section 4.6 (p. 105).

The second phase of data analysis: Inferential analysis

The second phase of the data analysis consists of an examination of the associations that exist between variables in the model. Like the first phase (the descriptive analysis), this phase consists of three steps, which are discussed below. Before these analyses are undertaken, however, tests for construct validity for both the Maslach Burnout Inventory (MBI) and the Job Content Questionnaire (JCQ) are performed. Factor Analyses on the components of the MBI and the JCQ are carried out to ensure the use of sufficiently reliable measures in the further analyses. The results of these tests are reported in Section 5.2.1 and 5.2.2 (p. 111 and p. 114).

The factor analysis of the JCQ serves an additional purpose. The 18 JCQ survey questions measure four distinguishable demands and resources: skill discretion, decision authority, psychological job demands and co-worker support. Skill discretion and decision authority are both related to the respondents' autonomy. Karasek et al. (1998) suggest combining these two dimensions to form one new dimension "decision latitude". In fact, many publications use decision latitude as one dimension instead of the two separate dimensions skill discretion and decision authority. While the validation of the MBI predominantly serves as a validation of the instrument as such, for the JCQ the validation also serves as an aid to choose, whether or not the dimensions skill discretion and decision authority are best combined into decision latitude, or best left as two separate dimensions. The results of this analysis are reported in Section 5.2.2 (p. 118).

Inferential analysis step 1: The association between respondent characteristics and MBI scores

In this step, direct associations between respondent characteristics (the left hand column of the model) and MBI scores (the right hand column of the model) are examined, as illustrated by Figure 3-6 below.

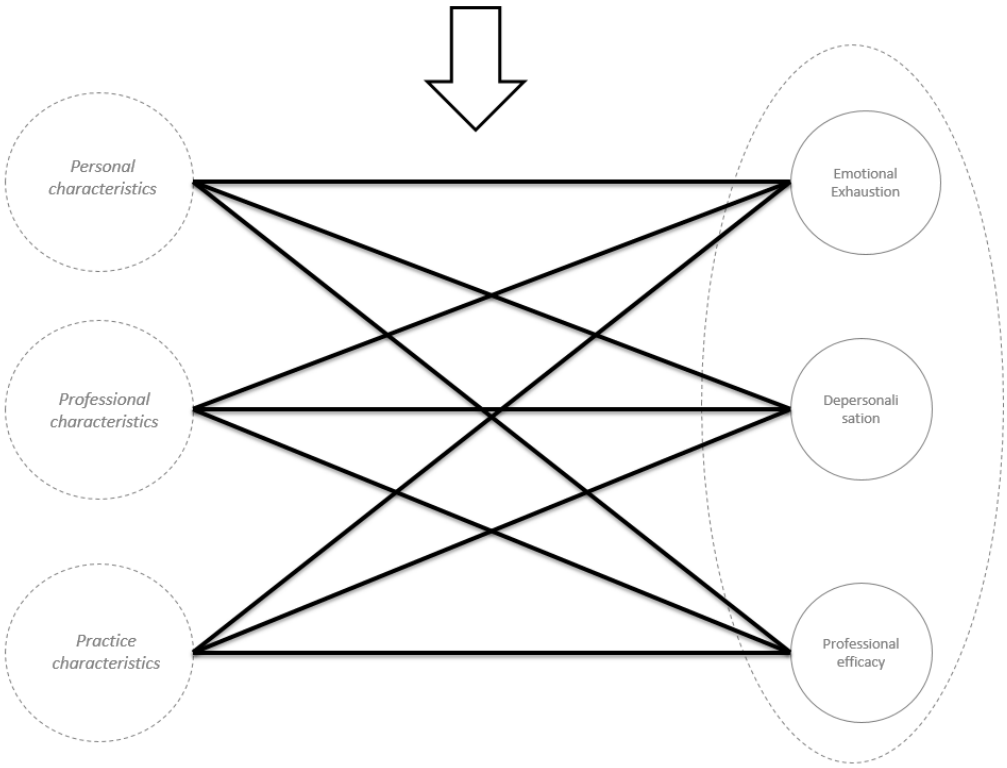

Figure 3-6: Visualisation of the part of the empirical model that is analysed in 'Inferential analysis step 1'

The aim of this step is to address the second and the fourth research objective: 'To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy' and 'To identify specific groups within the profession that are at risk for burnout'.

The selection of characteristics to include in the survey was based on a review of the extant literature: personal, professional and practice characteristics that are known to be associated with burnout scores were selected. Therefore, all characteristics are tested for their association with the three dimensions of burnout. Socio-economic and health related data was collected using the practices' ZIP-code. Since virtually no literature is available to steer the selection of relevant variables, this element of the analysis is exploratory in nature, which calls for a systematic analysis of potential associations. Again, all variables are analysed for a potential association with the three dimensions of burnout.

Tests used in this step include Pearson Correlation, Single Linear Regression, Multiple Regression Analysis, Partial Regression, Analysis of Variance (ANOVA) and the Independent Samples t-Test. The choice for a specific test is dependent on the nature of the variable involved (e.g. the association between two interval or ratio type variables is examined using Pearson Correlation, the association between one nominal and one interval type variable using Independent Samples t-Test (in the case of two possible answers e.g. gender) or ANOVA (in the case of multiple possible answers e.g. practice type). The choice for the assumption of (un)equal variance for carrying out the t-Test is based on the Levene's Test for Equality of Variances. Single item measures (variables that are measured by one question) are treated as ordinal variables. When the data suggest, that a third factor is of influence, this is corrected for e.g. by using Partial Regression corrected for that third factor. For all statistical analyses an alpha of .05 was used to determine whether a found association is significant. In most instances the p-value is also reported. In addition to testing for statistical significance, the 'strength' or explanatory power of a found association is of relevance. Generally, associations are reported as 'relevant' if the explained variation is at least 1% ($pr \geq .10$ or $p\eta \geq .10$).

The findings of this step are reported in Section 5.3 (p. 119) and discussed Further in Section 6.3 (p. 166). Specific groups of GPs at risk for burnout are identified in Section 6.5 (p. 177).

Inferential analysis step 2: Demands and resources and their association with MBI scores

In this step, the focus is on the association between demands and resources (the middle column of the model) on one hand, and the three dimensions of burnout (the right-hand column of the model) on the other, as illustrated in Figure 3-7 below.

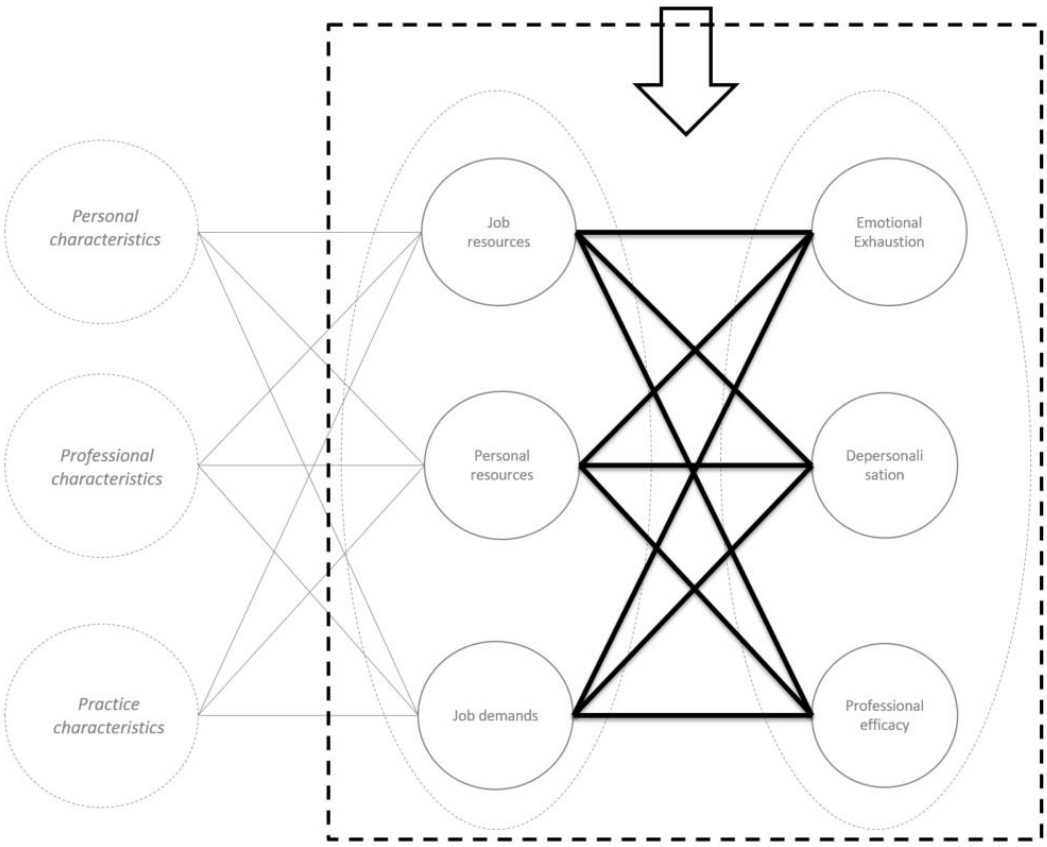

Figure 3-7: Visualisation of the part of the empirical model that is analysed in 'Inferential analysis step 2'

The aim of this step is to examine to what extent variation in demands and resources is associated with variation in burnout scores. This analysis serves

to identify relevant demands and resources for further analysis in step 3. For selecting statistical tests, the same choices are made as in step 1. Since all demands and resources are of potential relevance, as discussed in the literature review, the association between all demands and resources and the three dimensions of burnout is examined. The findings of this step are reported in Section 5.4.1 (p. 135).

Inferential analysis step 3: Association between personal, professional and practice characteristics and MBI scores

In this last step of the data analysis, associations between respondent characteristics (left hand column of the model) and demands and resources (middle column of the model) are examined, as illustrated in Figure 3-8 below.

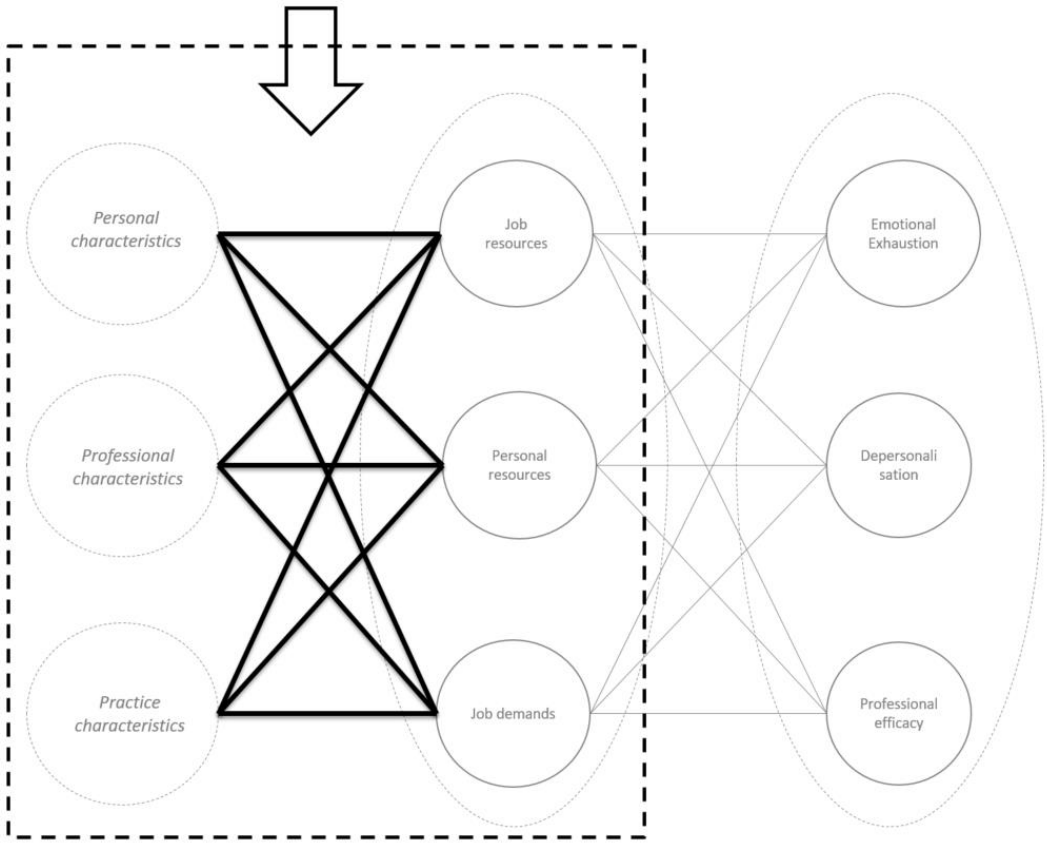

Figure 3-8: Visualisation of the part of the empirical model that is analysed in 'Inferential analysis step 3'

Of those demands and resources that are associated with one or more dimensions of burnout, as identified in the previous step, the association with respondent characteristics is examined. For selecting the appropriate statistical tests, the same criteria are used in in the previous two steps. The findings of step 3 are reported in Section 5.4.2 (p. 141).

The results of step 2 and 3 combined are used to address the third research objective: ‘To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in job demands and resources’. The role of demands and resources is discussed in Section 6.4 (p. 170).

Overview of found associations

Considering the large number of non-interval (or ratio) type variables the choice was made to not use analysis methods such as Path Analysis or Structured Equation Modelling, since these analyses require the majority of variables to be interval or ratio type. Statistically testing the validity of the model as a whole is, therefore, not part of the data analysis. The test of the empirical model as a whole also falls outside of the scope of this thesis. In the last section of Chapter 5, Section 5.5 (p. 151), an overview of all found associations is provided. This overview, however, serves as a manner of presenting the main findings graphically and should not be considered to be a validation of the model as a whole. Like the empirical model serves as an aid to analyse the data in a structured manner, so does the presentation of found associations in one figure serve as an aid to present the main findings. The overall presentation of the findings in Section 5.5 is based on a multitude of one-on-one analyses and should not be misconstrued as a statistical validation. This thesis does not aim to come up with a new empirical model, neither does it claim to statistically validate the empirical model that is used.

3.6.7 Bias

For sending the invitation letter, a random selection of practising GPs is made in the LHV members database. Considering that virtually all GPs are member of the professional organisation LHV, recruiting amongst LHV members only does not necessarily create a bias. There are, however, several sources of potential bias that are of relevance, such as potential overrepresentation of specific types of respondents in the sample, the Healthy Worker Effect and the common method bias. Each is discusses below.

In Section 3.6.4 (p. 73) it was argued that older GPs might be overrepresented in the group of respondents, since the Movir report shows that younger GPs are less frequently of the opinion that the LHV has a role to play in addressing the issue of GP work-stress (Movir 2012, p.23).

A respondent for whom burnout is not a concern at all might have arguably been less inclined to participate in this study. This potentially leads to a bias towards more unfavourable scores (GPs with higher burnout scores among respondents than among the profession as a whole). At the same time there is a bias towards more favourable scores. One of the selection criteria is active practice. This implies that GPs who are on prolonged sick-leave because of a burnout are not invited to participate. Additionally, GPs who have left the practice of medicine are excluded from this study. This so-called Healthy Worker Effect as discussed by e.g. Li and Sung (1999) is a common problem in occupational health research. All studies that investigate the severity or prevalence of occupational health related topics are confronted with this bias. Generally incidence or severity are underreported if only those who have remained in their job are surveyed.

A last bias that needs to be discussed is the so-called ‘common method bias’ as described by e.g. Lindell and Whitney (2001). When respondents are

asked to report on multiple aspects in the same survey, found associations might be exaggerated. Leiter at al. (2014) point out that:

> *"the assessment of burnout using self-report questionnaires increases the risk of common method bias when health is also assessed using self-reports of symptoms or illnesses"* (Leiter et al. 2014, p. 11).

In this study respondents are not asked to self-report symptoms or illnesses, but they are asked to self-report on e.g. the length of their working week or the presence of demands and resources. The risk for an 'inflated effect size' is the same. A GP who feels exhausted from his or her job, scoring high on emotional exhaustion, might feel his or her working week never ends and might (unconsciously) overstate the length of his or her working week or the presence of psychological job demands. Despite wide acknowledgement of the phenomenon of common method bias, many researchers state that a statistical correction is not called for (e.g. Conway and Lance 2010). An implication of the common method bias, as argued by Conway and Lance (2010), is that the reader should be aware that wherever associations are reported, the measures are based on self-reporting (in this study all data with the exception of environmental or patient related data). Strictly speaking, wherever a finding like 'an association was found between emotional exhaustion and the length of the working week' is reported in this thesis, the reader should read this as 'an association was found between self-reported emotional exhaustion and the self-reported length of the working week'.

3.7 Summary

In this chapter the aim, theoretical framework and design of this study were presented. This study, aimed at investigating burnout amongst GPs, was presented as a survey based, theory driven, confirmatory, empirical, non-experimental, relational fixed design, cross-sectional study.

In this chapter several ethical considerations were discussed and measures that are taken to address ethical issues were stated. This chapter further discussed the chosen research methods, with an emphasis on survey development and methods of data collection and analysis. The results of the survey are presented in the subsequent two chapters. The findings of steps 1 to 3 of the descriptive analysis are presented in the next chapter, Chapter 4, followed by the findings of step 1 to 3 of the inferential analysis in Chapter 5 (p. 110).

Chapter 4 Results I, Survey results

4.1 Introduction

In this chapter, the survey results are presented. The findings presented in this chapter are the results of the steps 1, 2 and 3 of the descriptive data analysis (cf. Section 3.6.6, p. 79). After reporting the response rate (Section 4.2 below), the chapter starts off with a presentation of the respondents' personal, professional and practice related characteristics (results of Step 1, reported in Section 4.3, p. 92). After the respondent characteristics are presented, the representativeness of the sample is discussed (Section 4.4, p. 97). The results of step 2, the outcomes of the burnout measures, are reported in Section 4.5, p. 100). The third and last step of the descriptive data analysis consisted of an inventory of the respondents' demands and resources. These findings are reported in Section 4.6 (p. 105). In the last section of this chapter (Section 4.7, p. 108), the main findings are summarised.

4.2 Response

4,000 GPs were invited to participate in the study. In total, 1,345 GPs participated, yielding a response rate of 33.6%. In total 47 respondents failed to complete the MBI in part or in its entirety. These were deleted from the database, leaving 1,298 completed surveys available for analysis. This brings the effective response rate to 32.5%.

4.3 Respondent Characteristics

4.3.1 Introduction

In this section, the findings of the first step of the descriptive data analysis, an inventory of the respondents' characteristics, are reported, as illustrated by Figure 3-3 below.

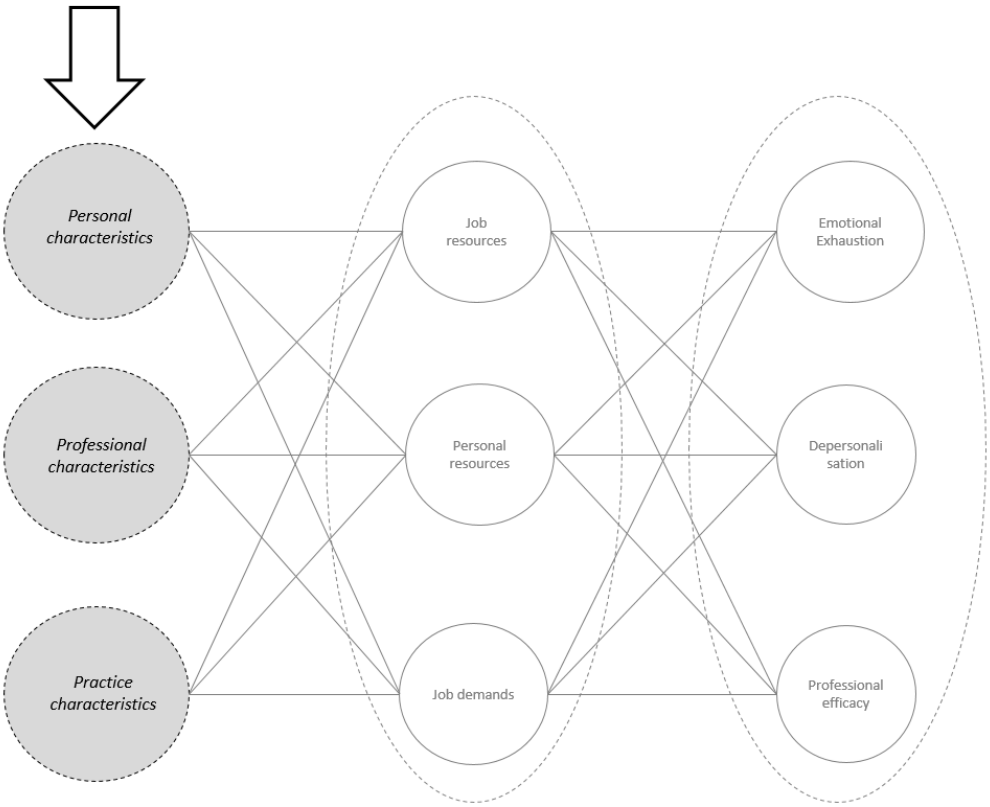

Figure 3-3: Visualisation of the part of the empirical model that is analysed in 'Descriptive analysis step 1'

4.3.2 Summary of respondent characteristics

The respondents' characteristics are summarised in Table 4-1 below. For each variable, the table lists the number of valid responses. The percentages that are reported in the table are percentages of valid responses.

Table 4-1 Summary of respondent characteristics

Personal characteristics		
Gender (N=1290)	Male	61.2%
	Female	38.8%
Age (N=1298)	M=50.6	SD=8.55
Partner (N=1291)	Yes	95.0%
	No	5.0%
Children in household (N=1291)	Yes	62.1%
	No	37.9%
Number of children in household (N=806, only >0 included)	M=2.3	SD=0.94
Number of children younger than six years	M=1.8	SD=1.10
Number of children aged six or older	M=0.4	SD=0.76
Professional characteristics		
Type of employment (N=1294)	(Co)owner	95.8%
	Salaried GP	1.8%
	Locum GP	2.1%
	Other	0.2%
Number of days per week employed (N=1297)	M=4.0	SD=0.76
Hours per week worked	M=48.7	SD=13.0
Do you have an additional appointment next to your work as GP (e.g. appointment as university lecturer)? (N=1288)	Yes	21.7%
	No	78.3%
Number of years of work experience (N=1292)	M=18.6	SD=9.03
Practice characteristics		
Practice type (1296)	Solo practice	24.5%
	Duo practice	29.7%
	Group practice	21.8%
	Healthcare centre	13.1%
	Other	11.1%
Number of patients per FTE GP (N=1264)	M=2,326	SD=425.7
Number of GPs in practice (N=1296)	M=3.2	SD=1.89
FTE GPs in practice (N=1216)	M=2.2	SD=1.37
Number of assistants in practice (N=1287)	M=4.3	SD=2.76
FTE assistants in practice (N=1212)	M=2.5	SD=1.84
Number of practice nurses (N=1292)	M=2.5	SD=1.50
FTE practice nurses (N=1198)	M=1.1	SD=0.92
Scheduled consultation duration (minutes) (N=1291)	M=11.6	SD=2.1
Walk-in open access (N=1288)	Yes	11.3%
	No	88.7%
Practice with special offering (N=1290)	Yes	48.2%
	No	51.8%
Respondent with GP specialty training (N=1294)	Yes	28.7%
	No	71.3%

4.3.3 Age and gender

When asked about their age at the time of completing the survey, the average respondent age was 50.6 years (SD=8.55). For female respondents the average age was 46.6 years, the average age for male respondents was 53.1 years. This difference is statistically significant (t=14.45, p=.00). Male and female respondents, show a different age distribution as illustrated in Table 4-2 below. A Pearson Chi-Square Test confirms the inequality of the male and female age distributions (χ^2=191.9; p=.00).

Table 4-2: Age distribution for male and female respondents

	≤35	36-40	41-45	46-50	51-55	56-60	60+
Female	8.2%	16.8%	23.4%	20.2%	14.2%	13.4%	4.0%
Male	2.3%	8.1%	8.1%	12.9%	21.4%	31.1%	16.1%
All respondents	4.5%	11.6%	14.1%	15.7%	18.6%	24.4%	11.3%

The relevance of the found difference in age distribution is twofold. Firstly, it serves as a reference for determining the representativeness of the sample for the population as will be discussed in Section 4.4 (p. 91). Secondly, the different distributions imply that when associations between age and other variables are examined a correction for gender is called for and when association between gender and other variables are examined, a correction for age is required.

4.3.4 The GP's working week

The results indicate that only one in five respondents (20.7%) works fulltime, with a four day working week being the most common. Among the respondents, one third of all GPs (32.6%) work four days a week. Male respondents report working fulltime considerably more often (29.4%) than female respondents (6.8%). Four in five male respondents (83.6%) work four days or more. The percentage of female respondents who work four days or more is half that number (40.5%). The results also indicate that respondents

rarely (4.3%) work less than three days. Table 4-3 below shows the distribution of the amount of days worked per week for all respondents as well as for male and female GPs separately. The difference between the distributions of days worked per week for male and female respondents is significant (χ^2=307.4; p=.00).

Table 4-3: Distribution of number of days worked per week for male and female respondents

Number of days worked per week	2 days or less	2.5 days	3.0 days	3.5 days	4.0 days	4.5 days	5.0 days
All respondents	1.7%	2.6%	16.8%	12%	32.6%	13.6%	20.7%
Female GPs	3%	5%	32.1%	19.4%	28.9%	4.8%	6.8%
Male GPs	0.8%	1.1%	7.1%	7.2%	35%	19.2%	29.4%

Although most respondents do not work fulltime, the average reported length of the working week is 48.7 hours. Fulltime employed respondents report an average working week of 61.5 hours. The average “working day” (calculated as hours worked per week divided by the number of days worked) ranges from 12.3 hours per day for full time working GPs to 13.1 hours for GPs who work halftime or less. The lower the number of days worked per week, the longer the working day.

One in five respondents (21.7%) has a paid appointment, e.g. as a university lecturer or policy advisor, in addition to his or her job as GP. Respondents with a paid position outside of the GP practice on average have a slightly smaller GP appointment: 3.8 days per week, compared to 4.0 days per week for those who do not have a side job. This difference is significant (t=3.95, p=.00). GPs with a ‘side job’ work on average 2.5 hours per week less in the GP practice than GP who only work within the GP practice. This difference is significant (t=2.69, p=.01).

Locum GPs and salaried GPs are younger and work part-time more frequently than practice (co)owners. Practice owners report the longest working weeks.

4.3.5 Practice environment characteristics

In the survey the practice ZIP-code was requested and 1,270 respondents (99%) provided their ZIP-code. The practice ZIP-code was used to determine, amongst others, the socio-economic environment in which the practice was located. These environmental practice characteristics are summarised in Table 4-4 below.

Table 4-4 Summary of practice environment characteristics

Socio-economic status		
Area Socio-economic status score	M=-0.04	SD=1.16
GP density		
Contact minutes per FTE GP	M=60,550	SD=29,296.4
More/less FTE GP per 1,000 inhabitants	M=+1.16	SD=2.18
Health indicators		
Patients with ≥3 chronic conditions / 1,000 inhabitants	M=28.2	SD=9.89
% patients with experienced poor health	M=11.6	SD=3.71

4.4 Representativeness of the sample

In the Netherlands, the medical labour force is regularly monitored. Nivel, the Netherlands Institute for Health Services Research, periodically surveys the different medical professions in order to monitor supply and demand. This survey, together with medical professional registration data, serves as the formal source for the medical professional capacity planning in the Netherlands. The latest survey amongst GPs was held in 2012 and published in 2013 (Nivel, 2013). This report contains both survey data as well as data from official medical professional registrations. In Table 4-5 below, the data of this study is compared to the most recent (2013) Nivel report.

Table 4-5: comparison between respondent characteristic of this study and respondent characteristics of survey by the Netherlands Institute for Health Services Research (Nivel).

	This study (N=1,289)			**Nivel** (N=1,452)		
Age and gender						
% female GPs	39%			45%		
% male GPs	61%			55%		
Average age all GPs	50.6 years			48.5 years		
Average age female GPs	46.6 years			44.3 years		
Average age male GPs	53.1 years			51.6 years		
Age distribution	all	female	male	all	female	Male
≤35 years	5%	8%	2%	7%	12%	3%
36-40 years	12%	17%	8%	14%	22%	8%
41-45 years	14%	23%	8%	15%	21%	11%
46-50 years	16%	20%	13%	16%	18%	14%
51-55 years	19%	14%	21%	17%	13%	20%
56-60 years	24%	13%	31%	20%	11%	26%
60+ years	11%	4%	16%	12%	4%	18%
Practice type and employment						
Solo practice	25%			26%		
Duo practice	30%			38%		
Group / other	46%			36%		
Practice owner	96%			78%		
Salaried	2%			10%		
Locum GP	2%			12%		
Average FTE, all GPs	0.80			0.82		
Average FTE, female GPs	0.71			0.64		
Average FTE, male GPs	0.85			0.83		
Patients / inhabitants per FTE GP	2,326 (registered patients)			2,397 (inhabitants)		

For the Nivel survey, 2,269 GPs were invited to participate in the study. The Nivel survey had a 64% response rate, resulting in a sample of 1,452 participants. The Nivel survey is held periodically. The 2012 survey was the 33rd time Nivel surveyed the profession (Nivel, 2013).

Although the number of participants of this study is of the same order of magnitude as the Nivel survey (Nivel survey has 12% more respondents), the Nivel survey is more reliable since: a) the Nivel survey response rate is twice as high as this study (64% versus 33%), b) the Nivel survey is held many times before which creates the opportunity to verify findings with previous measurements and c) the Nivel survey is backed up by formal professional registries. Comparing the characteristics of this study to the Nivel survey data provides an insight in the representativeness of the respondent group for the profession as a whole.

When the respondent characteristics of this study are compared with the Nivel survey characteristics, several differences can be observed. The biggest difference is in the percentage of practice owners. In this study 96% of all respondents are practice owners, while in the Nivel survey, 78% of respondents are practice owners. There appears to be an overrepresentation of practice owners in this study. The respondents in this study are on average two years older and the percentage of male respondents 6% higher than in the Nivel survey. These differences are consistent with a higher percentage of practice owners, since practice owners are older than salaried and locum GPs and thereby also more frequently male (male GPs are on average older than female GPs).

There are several possible explanations for the overrepresentation of practice owners. First of all, the topic of the survey – GP burnout – could be more of an issue for practice owners who in addition to their medical responsibilities also perform administrative and managerial roles. A young locum or salaried GP, for whom burnout might be less of an issue might be less inclined to respond to the invitation to participate in this study. Another explanation might be found in the method in inviting potential participants. Invitations were sent on stationery of the professional association, the LHV. The 2012 Movir study revealed that while 60% of GPs who were older than 45 years of age found that the LHV should play a role in addressing the issue

of job-related stress and burnout, the majority of GPs aged under 45 expressed that this was not an issue the LHV should be dealing with (cf. Section 3.6.4, p. 73). The method of soliciting respondents might have also led to an overrepresentation of older GPs, who are more frequently practice owner.

Since 96% of all respondents in this study are practice owners, conclusions based on this study should be extrapolated to the profession as a whole with due caution. Conclusions might be limited to practice owning GPs.

4.5 Outcome of MBI measurements

In this section, the results of the second step of the descriptive data analysis, the outcome of the burnout measurements based on the Maslach Burnout Inventory (MBI), are presented, as illustrated by Figure 3-4 below.

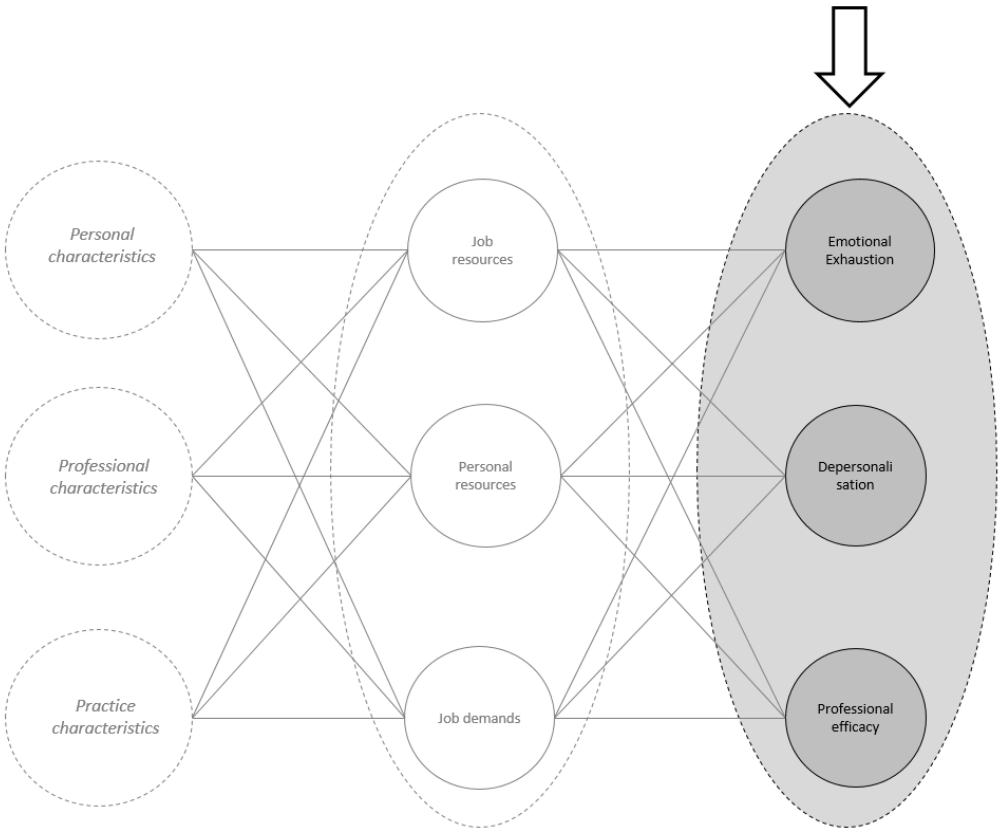

Figure 3-4: Visualisation of the part of the empirical model that is analysed in 'Descriptive analysis step 2'

The section starts with a table reporting the answers to the MBI questions (Table 4-6 below), after which some measures of central tendency are reported and the findings are interpreted in terms of burnout risk.

Table 4-6: Respondents' answers to the 20 MBI questions

	MBI-subscale	Never	Sporadic	Occasionally	Frequently	Often	Very often	Always
I feel emotionally drained from my work (n=1297)	EE	7.9%	24.0%	23.8%	21.0%	13.6%	8.6%	1.2%
I feel used up at the end of the day (n=1295)	EE	4.7%	15.4%	25.3%	23.2%	17.5%	11.8%	2.1%
I feel tired when I get up in the morning and have to face another day at work (n=1297)	EE	12.5%	29.3%	23.9%	17.3%	10.8%	5.1%	1.2%
I can easily understand how patients feel about things (n=1297)	PE	0.2%	0.6%	0.8%	3.3%	15.0%	39.3%	40.8%
I feel I treat some patients too impersonally (n=1292)	Dep	9.8%	40.5%	30.0%	10.9%	6.0%	2.7%	0.2%
Working with people all day is a real strain for me (n=1290)	EE	14.3%	28.7%	25.1%	14.6%	10.2%	6.3%	0.9%
I deal effectively with the problems of patients (n=1288)	PE	0.4%	0.5%	0.9%	4.1%	14.8%	51.9%	27.3%
I feel burned out from my work (n=1289)	EE	23.7%	31.3%	19.2%	12.2%	8.2%	4.6%	0.9%
I feel I am positively influencing other peoples' lives through my work (n=1289)	PE	0.1%	1.4%	4.9%	12.0%	22.5%	42.7%	16.4%
I have become more callous toward people since I took this job (n=1297)	Dep	36.5%	30.5%	16.7%	9.0%	5.2%	2.3%	0.8%
I worry that this job is hardening me emotionally (n=1297)	Dep	32.8%	32.7%	18.6%	8.5%	4.5%	2.2%	0.6%
I feel frustrated by my job (n=1295)	EE	24.8%	32.3%	20.5%	11.8%	6.0%	4.0%	0.6%
I feel I am working too hard on my job (n=1289)	EE	5.1%	16.1%	23.0%	20.1%	17.6%	14.0%	4.0%
I don't really care what happens to some patients (n=1293)	Dep	49.3%	35.0%	10.8%	2.8%	1.3%	0.9%	0.1%
I can easily create a relaxed atmosphere with patients (n=1293)	PE	0.6%	0.3%	0.8%	2.9%	11.1%	46.7%	37.6%
Working with clients cheers me up (n=1293)	PE	0.5%	0.5%	3.3%	10.5%	22.9%	40.4%	21.9%
I have accomplished many worthwhile things in this job (n=1278)	PE	0.3%	1.0%	4.6%	11.2%	20.3%	42.2%	20.4%
I feel like I am at the end of my tether (n=1291)	EE	28.4%	34.4%	15.8%	9.5%	6.3%	4.4%	1.3%
In my work, I deal with emotional problems very calmly (n=1286)	PE	0.1%	1.7%	3.8%	10.1%	21.3%	40.4%	22.6%
I feel patients blame me for some of their problems (n=1294)	Dep	24.0%	48.1%	16.2%	5.8%	3.5%	1.9%	0.6%
EE = Emotional Exhaustion, Dep = Depersonalisation, PE = Professional Efficacy								

When the scores for the three dimensions of burnout are calculated in accordance with the guidelines as set out in the UBOS[4] manual, the aggregate values as presented in Table 4-7 below are obtained. A distribution of MBI subscale score classifications is provided in Table 4-8 (p. 103) and Figure 4-1 (p. 103).

Table 4-7: Measures of central tendency for respondents' MBI subscale scores

	M	SD	Classification of mean value according to GP reference values
Emotional Exhaustion	2.10	1.118	Average for GP
Depersonalisation	1.26	0.827	N/a
male	1.31	0.880	Average for GP
female	1.17	0.727	Average for GP
Professional efficacy	4.80	0.729	High for GP

The average scores for emotional exhaustion and professional efficacy do not differ significantly for male and female respondents, but a significant gender difference exists in depersonalisation scores. This finding is consistent with the extant burnout literature, in virtually all studies male respondents report higher levels of depersonalisation. The UBOS manual (Schaufeli and Van Dierendonck, 2000) provides separate reference values for depersonalisation for interpreting male and female depersonalisation scores, while such a distinction is not made for interpreting emotional exhaustion and professional efficacy scores. When the scores on the three dimensions are classified in terms of high and low, using the reference values provided in the manual (Table 4-8 below), distributions as presented in Table 4-9 (below) and Figure 4-1 (below) can be observed.

[4] UBOS (Utrecht Burnout Survey) is the name of the Dutch translation of the Maslach Burnout Inventory

Table 4-8: Classification of MBI subscale scores as provided in the UBOS manual, reference values for first line healthcare professionals (Schaufeli and Van Dierendonck 2000, p. 67)

	EE	Dep (male)	Dep (female)	PE
Very low	≤.50	≤.20	≤.20	≤3.14
Low	.51-1.24	.21-.79	.21-.59	3.14-3.70
Average	1.25-2.74	.80-2.19	.60-1.59	3.71-4.70
High	2.75-3.73	2.20-2.98	1.60-2.58	4.71-5.41
Very high	≥3.74	≥2.99	≥2.59	≥5.42

EE = emotional exhaustion
Dep = Depersonalisation
PE = Professional efficacy

Table 4-9: Distribution of MBI subscale scores

	EE	Dep	PE
Very low	5.9 %	0.6 %	1.6 %
Low	16.6 %	8.2 %	5.2 %
Average	50.2 %	54.5 %	32.1 %
High	17.5 %	15.6 %	37.8 %
Very high	9.9 %	5.5 %	23.4 %

EE = emotional exhaustion
Dep = Depersonalisation
PE = Professional efficacy

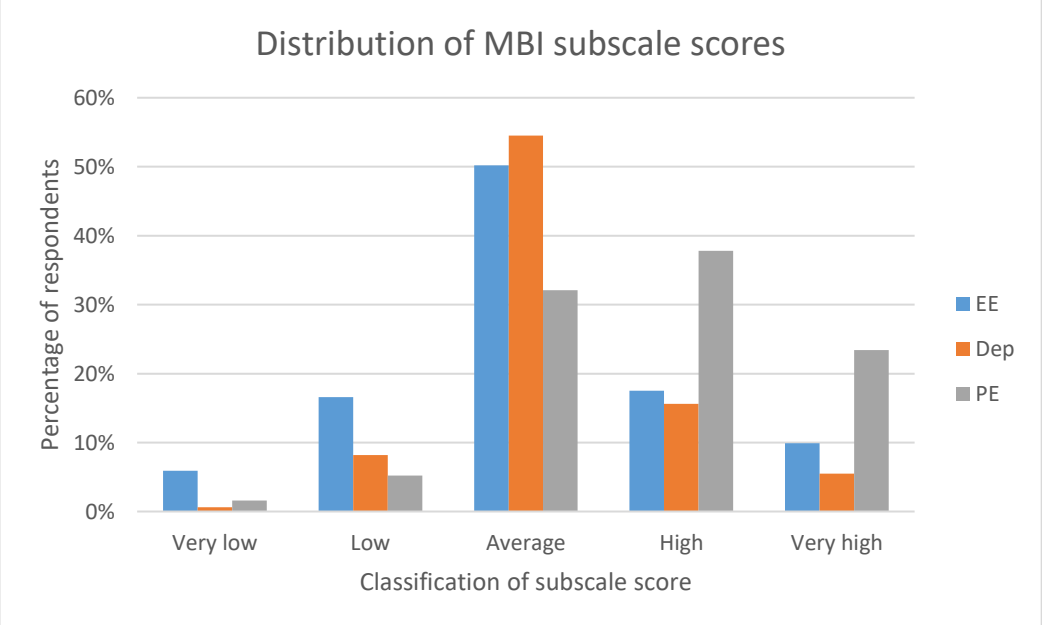

Figure 4-1: Distribution of MBI subscale score classifications

For both emotional exhaustion and depersonalisation, the respondents' score of about half the respondents would classify as 'average for GPs'. All distributions are skewed toward high scores.

For both emotional exhaustion and depersonalisation, considerably more respondents score 'very high' than 'very low'. In addition, almost twice as much respondents report a high score on depersonalisation than a low score. This indicates that high (unfavourable) scores are more common than low (favourable) scores. At the same time, respondents score relatively high on professional efficacy, which is a favourable outcome.

In order to interpret the scores in terms of burnout risk, the scores need to be examined in conjunction for each respondent. According to the manual (Schaufeli and Van Dierendonck, 2000), an individual respondent would classify as burned out if he or she combines a (very) high score on emotional exhaustion with either a (very) high score on depersonalisation or with a (very) low score on professional efficacy.

When the scores on the MBI subscales are analysed in conjunction, the following results become apparent. In the sample, one in eight (12.7%) respondents combines a (very) high score on emotional exhaustion with a (very) high score on depersonalisation. 3.1% of respondents combine a (very) high score on emotional exhaustion with a (very) low score on professional efficacy. 2.1% score unfavourably on all three subscales of the MBI. In total almost one in seven (13.8%[5]) respondents would be categorised as burned out.

[5] 12.7+3.1-2.1=13.7 and not 13.8. This difference can be ascribed to rounding. If unrounded numbers are used the result corresponds to the reported value (12.734+3.125-2.109=13.75)

4.6 The GP's demands and resources

The third step of the descriptive data analysis was the analysis of the respondents' reported demands and resources, as illustrated in Figure 3-5 below.

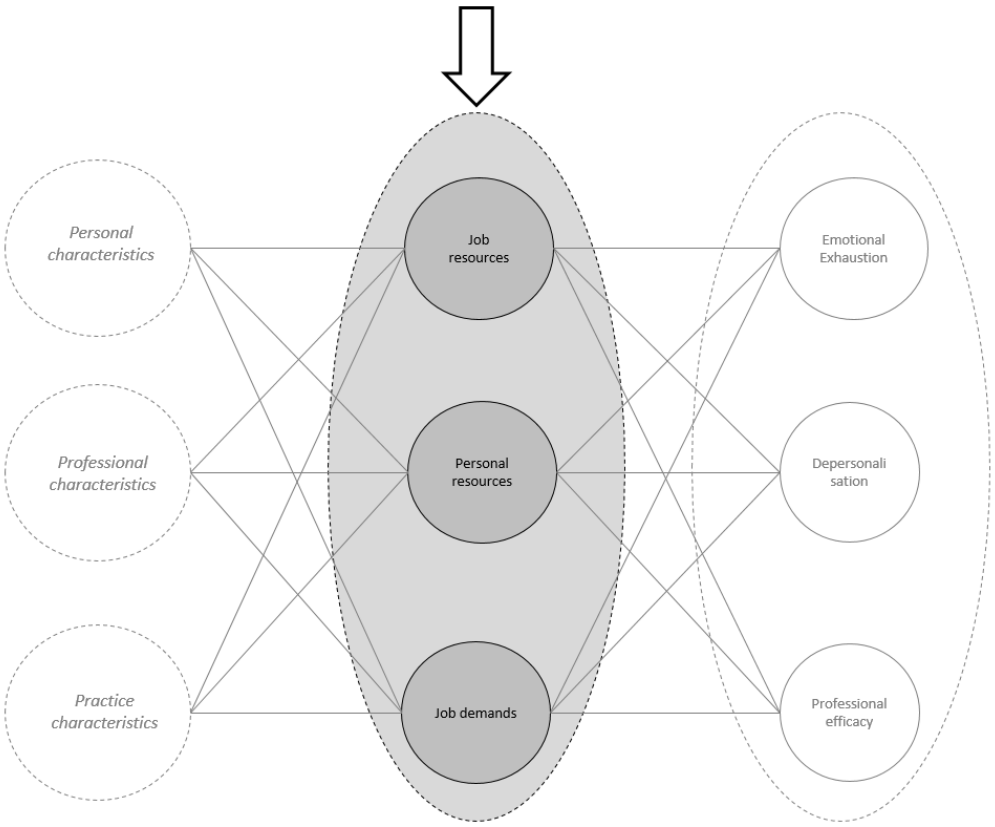

Figure 3-5: Visualisation of the part of the empirical model that is analysed in 'Descriptive analysis step 3'

18 Questions from the Job Content Questionnaire (JCQ) together measured three resources (skill discretion, decision authority and co-worker support) and one job-demand (psychological job demands). Three questions were added to also inquire about the experienced administrative burden (demand), home support (resource) and work-home conflict (demand).

In Table 4-10 below, all respondents' answers to the questions related to demands and resources are reported. The table also indicates which question is used to measure which demand or resource.

Table 4-10: Respondents' answers to the questions inquiring about demands and resources including the Job Content Questionnaire

	Dimension	Strongly disagree	Disagree	Agree	Strongly agree
My job requires that I learn new things (n=1297)	JCQ SD	0.2%	0.8%	47.3%	51.8%
My job involves a lot of repetitive work (n=1295)	JCQ SD	2.5%	32.7%	56.0%	8.8%
My job requires me to be creative (n=1291)	JCQ SD	0.0%	5.3%	64.3%	30.4%
My job allows me to make a lot of decisions on my own (n=1293)	JCQ DA	0.2%	8.3%	56.6%	34.9%
My job requires a high level of skill (n=1296)	JCQ SD	0.1%	0.5%	41.6%	57.8%
On my job, I have little freedom to decide how I do my work (n=1295)	JCQ DA	14.8%	65.1%	17.4%	2.7%
I get to do a variety of things on my job (n=1292)	JCQ SD	0.1%	3.6%	47.9%	38.4%
I have a lot to say about what happens on my job (n=1294)	JCQ DA	1.5%	21.6%	53.5%	23.5%
I have the opportunity to develop my own professional skills (n=1295)	JCQ SD	0.2%	4.7%	62.5%	32.6%
My job requires working very fast (n=1290)	JCQ PJD	0.2%	11.3%	54.1%	34.3%
My job requires working very hard (n=1285)	JCQ PJD	0.0%	4.7%	48.8%	46.8%
I am not asked to do an excessive amount of work (n=1286)	JCQ PJD	26.7%	56.2%	16.0%	1.1%
I have enough time to get the job done (n=1286)	JCQ PJD	14.5%	57.1%	26.8%	1.6%
I am free from conflicting demands others make (n=1273)	JCQ PJD	4.9%	34.1%	50.1%	10.8%
People I work with are competent in doing their jobs (n=1279)	JCQ CS	0.2%	3.0%	77.2%	19.5%
People I work with take a personal interest in me (n=1276)	JCQ CS	1.6%	12.1%	68.9%	17.4%
People I work with are friendly (n=1282)	JCQ CS	0.5%	2.8%	72.7%	23.9%
People I work with are helpful in getting the job done (n=1269)	JCQ CS	2.0%	19.3%	61.0%	17.7%
My job requires me to carry out too many administrative duties (n=1287)	Adm	0.5%	7.8%	38.9%	52.7%
My family provides me with a lot of support (n=1270)	HS	1.3%	10.3%	52.7%	35.7%
My job often competes with my family life for attention and energy (n=1274)	WHC	1.8%	17.1%	49.7%	31.4%

SD = Skill discretion
DA = Decision authority
PJD = Psychological Job demands
CS = Co-worker support
Adm = Administrative burden
HS = Home Support
WHC = Work-home conflict

Following the instruction in the JCQ manual, the scores for the demands and resources were calculated. The measures of central tendency (mean, standard deviation) are reported in Table 4-11 below. As mentioned previously in Section 3.6.6 (p. 83), the resources 'skill discretion' and

‘decision authority’ can be used separately or combined into one dimension called ‘decision latitude’. Table 4-11 below reports both the separate resources (skill discretion and decision authority) as well as the combined decision latitude score.

Table 4-11: Measures of central tendency for respondents’ demands and resources

	Demand / resource	Scale min–max	M absolute	SD	M expressed as scale% max=100%
Skill discretion	Resource	12-48	38.9	3.93	81%
Decision authority	Resource	12-48	36.6	6.28	76%
Decision latitude	Resource	24-96	75.0	8.74	78%
Psychological job demands	Demand	12-48	36.5	5.20	76%
Co-worker support	Resource	4-16	12.1	2.27	76%
Administrative burden	Demand	1-4	3.44	0.66	86%
Home support	Resource	1-4	3.23	0.68	81%
Work-home conflict	Demand	1-4	3.10	0.74	78%

Virtually all (99%) respondents (strongly) agreed with the statement that their job requires them to learn new things, 95% (strongly) agreed with the statement that their job requires creativity and 99% (strongly) agreed with the statement that their job requires a high level of skill. 95% of respondents reported having the opportunity to develop his or her professional skills. Although almost two thirds of respondents (65%) indicated that the job involves a lot of repetitive work and 86% of respondents (strongly) agreed with the statement that they get to do a variety of things on their job. Combined, these answers lead to a high level of reported skill discretion.

The reported level of decision authority is also high. 92% of respondents (strongly) agreed with the statement that their job allows them to make a lot of decisions on their own. 80% (strongly) disagreed with the statement that they have little freedom to decide how to do their work. 77% of respondents (strongly) agreed with the statement that they have a lot to say about what happens on their job.

The findings indicate that psychological job demands are high. Respondents indicated that the job requires working fast (88%) and hard (96%). 83% of respondents qualified the amount of work they have to carry out in their job as excessive and almost three quarters of respondents (72%) reported not having enough time to get the job done. The only reported positive element regarding psychological job demands is that the majority of respondents (61%) indicated that they are free from conflicting demands made by others.

Respondents reported a high level of co-worker support. They asserted that their colleagues are competent (97% agree), friendly (86% agree), helpful (79% agree) and that they take a personal interest in them (97% agree).

The experienced administrative burden within their job role is high. 92% of respondents (strongly) agreed with the statement “My job requires me to carry out too many administrative duties”.

Family was purported to be both a resource and a demand for the respondents. Although 88% of respondents (strongly) agreed with the statement “My family provides me with a lot of support”, 81% of respondents reported that the job often competes with the family for attention and energy (work-home conflict).

All in all, respondents report high demands, combined with high resources.

4.7 Summary

In this chapter, the survey results were presented (descriptive analysis steps 1 through 3). The survey, for which 4,000 GPs were invited to participate, was fully completed by 1,298 respondents, yielding an effective response rate of 32.5%. A comparison of respondent characteristics with the

characteristics of the profession as a whole brings to light an overrepresentation of practice owners, which implies limitations to the validity of the findings of this study to the profession as a whole.

The average reported length of the working week was 48.7 hours. This number, however, does not represent a fulltime working week, since only one in five respondents indicated that they are fulltime employed. The average fulltime working week is 61.5 hours.

When the answers to the questions, that together form the Maslach Burnout Inventory, are analysed, the results show, that one in eight respondents combines a (very) high score on emotional exhaustion with a (very) high score on depersonalisation. 3% of respondents combine a (very) high score on emotional exhaustion with a (very) low score on professional efficacy. 2% score unfavourable on all three subscales of the MBI. In total almost one in seven respondents would be categorised as burned out.

Respondents indicate high levels of available resources. Skill discretion, decision authority, co-worker support and home support all score high. At the same time, the GP is confronted with high demands. The reported psychological job demands, the administrative burden and work-home conflict are all high as well. All in all, respondents report high demands, combined with high resources.

In this chapter, the results of the three steps of the descriptive data analysis were presented. The results of the second part of the data analysis, the three steps of the inferential data-analysis, focussing on the associations between the variables in the model, are presented in the next chapter, Chapter 5.

Chapter 5 Results II: Further analysis of the collected data

5.1 Introduction

In this chapter, the findings that were presented in the previous chapter are analysed in greater detail. The emphasis of this analysis lies on the association between the different variables. The findings presented in this chapter are the result of the steps 1, 2 and 3 of the inferential data analysis (cf. Section 3.6.6, p. 83). Before these findings are presented, the chapter starts with a validation of the used measurement instruments: the Maslach Burnout Inventory (MBI), in the version called the Utrecht Burnout Scale (UBOS), and the Job Content Questionnaire (JCQ) (Section 5.2 below). In Section 5.3 (p. 119), the associations between personal, professional and practice characteristics and the MBI scores are investigated (Inferential analysis step 1). In Section 5.4 (p. 134), the role of demands and resources is analysed (Inferential analysis steps 2 and 3). An overview of the associations found in Inferential analysis steps 1, 2 and 3 is provided in Section 5.5 (p. 151).

5.2 Validation of measurement instruments that are used in the survey

The survey deployed in this study contained several multi-item measurements. The 20 MBI / UBOS survey questions measure the three distinguishable dimensions of burnout: emotional exhaustion, depersonalisation and professional efficacy. The 18 JCQ survey questions measure four distinguishable demands and resources: skill discretion, decision authority, psychological job demands and co-worker support.

While the validation of the MBI predominantly serves as a validation of the instrument as such, for the JCQ the validation also serves another purpose. In Section 3.6.6 (p. 83), the potential combination of the dimensions ‘skill

discretion' and 'decision authority' to one combined dimension 'decision latitude' was discussed. The results of the performed factor analyses are used as an aid to determine, whether skill discretion and decision authority are best used as separate dimensions, or as one combined dimension in further analyses.

In order to validate the reliability and the composition of the dimensions, a reliability analysis is performed. Cronbach's Alpha, Item-Total Correlation and 'Cronbach's Alpha if Item Deleted' are used to investigate the strengths of the dimensions. The distinctiveness of the dimensions is validated by means of Factor Analysis. For robustness of the validation both the Varimax Component Matrix and the Oblimin Pattern Matrix were analysed. For both analyses, Principal Component Analysis was used as method of extraction, and Kaiser Normalisation was applied in the rotation. Rotation converged in five iterations, unless otherwise specified.

5.2.1 Validation of the MBI / UBOS survey

In Table 5-1 below, the results of the reliability analysis for the three dimensions of burnout, that are measured by the UBOS questionnaire, are reported. The results of the factor analysis are presented in Table 5-2 (p. 113).

Table 5-1: Reliability Analysis for the MBI dimensions

MBI-subscale	Cronbach's Alpha		Item-total correlation	Cronbach's Alpha if item deleted
Emotional Exhaustion	.90	I feel emotionally drained from my work	.81	.87
		I feel used up at the end of the day	.74	.88
		I feel tired when I get up in the morning and have to face another day at work	.71	.88
		Working with people all day is a real strain for me	.57	.90
		I feel burned out from my work	.82	.87
		I feel frustrated by my job	.62	.89
		I feel I am working too hard on my job	.49	**.90**
		I feel like I am at the end of my tether	.73	.88
Depersonalisation	.73	I feel I treat some patients too impersonally	.45	.69
		I have become more callous toward people since I took this job	.60	.63
		I worry that this job is hardening me emotionally	.56	.65
		I don't really care what happens to some patients	.48	.69
		I feel patients blame me for some of their problems	.36	**.73**
Professional efficacy	.81	I can easily understand how patients feel about things	.44	.80
		I deal effectively with the problems of patients	.48	.80
		I feel I am positively influencing other peoples' lives through my work	.58	.78
		I can easily create a relaxed atmosphere with patients	.60	.78
		Working with clients cheers me up	.66	.76
		I have accomplished many worthwhile things in this job	.59	.78
		In my work, I deal with emotional problems very calmly	.49	.80

Values in 'Cronbach's Alpha if item deleted' column printed in boldface identify questions for which deletion would lead to an improvement of the Cronbach's Alpha.

The Cronbach's Alpha for all three dimensions of burnout is satisfactory (i.e. >.7). All questions have a positive and sufficiently large Item-Total Correlation. The 'Cronbach's Alpha if Item Deleted' values do not suggest that questions should be discarded, since in virtually no instance would deletion improve the Cronbach's Alpha. The dimensions Emotional Exhaustion and Depersonalisation both contain one question that would improve the Cronbach's alpha value if the question would be deleted (marked in boldface in the right hand column in Table 5-1), but this improvement would be marginal (third decimal), and provides insufficient grounds for adjusting the dimensions.

Table 5-2: Factor loadings in factor analyses for validation of the MBI

	Component loading in Pattern Matrix (Oblimin)				Component loading in Component Matrix (Varimax)		
Question	**EE**	**Dep**	**PE**		**EE**	**Dep**	**PE**
EE1	**.85**	.00	.06		**.84**	.17	.19
EE2	**.82**	.06	.06		**.80**	.11	.14
EE3	**.79**	.02	.01		**.78**	.13	.10
EE4	**.45**	.34	.09		**.52**	.43	.19
EE5	**.86**	.02	.08		**.86**	.19	.18
EE6	**.60**	.21	.02		**.63**	.31	.11
EE7	**.66**	.04	.13		**.62**	.07	.06
EE8	**.84**	.05	.03		**.82**	.11	.12
Dep1	.11	**.81**	.05		.06	**.76**	.05
Dep2	.23	**.62**	.02		.36	**.64**	.17
Dep3*	***.46****	*.44**	*.02*		***.55****	*.51**	*.13*
Dep4	.05	**.72**	.05		.11	**.69**	.15
Dep5	.06	**.50**	.05		.17	**.50**	.12
PEr1	.09	.10	**.59**		.01	.16	**.58**
PEr2	.04	.09	**.68**		.03	.01	**.65**
PEr3	.02	.03	**.71**		.07	.12	**.70**
PEr4	.00	.07	**.77**		.08	.03	**.74**
PEr5	.10	.01	**.76**		.20	.13	**.76**
PEr6	.02	.05	**.71**		.08	.14	**.71**
PEr7	.13	.01	**.57**		.21	.11	**.58**

For each question the value with the strongest component loading is printed in boldface.
An asterisk (*) is used to identify questions for which the loading on the intended factor is lower than the loading on another factor.

The results of the factor analyses are highly satisfactory. In both instances, the cumulative sum of squared loadings was 54.3%, which provides sufficient evidence for the explanation of variation by the independent factors. The loadings of the specific questions on the three factors are as intended and expected for 19 of the 20 questions. For one question (Dep3, marked * in Table 5-2) the loading is not as it should be. In both factor analyses this question loads stronger on emotional exhaustion than on depersonalisation. The difference in loading, however, is only present in the second decimal, which makes the difference in loading insufficiently strong to alter the composition of the two factors involved. In addition, the question loads sufficiently strong on the factor on which it is supposed to load. This side note regarding the Dep3 question does not disqualify the instrument as a whole. On the contrary, the results of the factor analyses are sufficiently supportive

of the instrument as it is intended. The three factors emotional exhaustion, depersonalisation and professional efficacy are clearly present.

5.2.2 Validation of JCQ

In Table 5-3 below, the results of the reliability analysis for the four dimensions that are measured by the JCQ questionnaire are reported. Skill discretion and decision authority are analysed separately as well as combined. The results of the factor analysis are presented in Tables 5-4 (p.117) and 5-5 (p. 118).

Table 5-3: Reliability Analysis for the Job Content Questionnaire dimensions

Dimension	Cronbach's Alpha		Item-total correlation	Cronbach's Alpha if item deleted
Skill Discretion	.58	My job requires that I learn new things	.33	.53
		My job involves a lot of repetitive work	.05	**.67**
		My job requires me to be creative	.38	.51
		My job requires a high level of skill	.42	.50
		I get to do a variety of things on my job	.43	.49
		I have the opportunity to develop my own professional skills	.39	.51
Decision Authority	.69	My job allows me to make a lot of decisions on my own	.49	.61
		On my job, I have little freedom to decide how I do my work	.47	.64
		I have a lot to say about what happens on my job	.56	.52
Decision Latitude (=SD+DA combined)	.72	My job requires that I learn new things	.29	.71
		My job involves a lot of repetitive work	.12	**.75**
		My job requires me to be creative	.36	.70
		My job requires a high level of skill	.38	.69
		I get to do a variety of things on my job	.42	.69
		I have the opportunity to develop my own professional skills	.56	.66
		My job allows me to make a lot of decisions on my own	.56	.66
		On my job, I have little freedom to decide how I do my work	.36	.70
		I have a lot to say about what happens on my job	.53	.66
Psychological Job demands	.65	My job requires working very fast	.39	.60
		My job requires working very hard	.47	.57
		I am not asked to do an excessive amount of work	.52	.54
		I have enough time to get the job done	.51	.54
		I am free from conflicting demands others make	.18	**.71**
Co-worker Support	.84	People I work with are competent in doing their jobs	.62	.82
		People I work with take a personal interest in me	.74	.76
		People I work with are friendly	.72	.78
		People I work with are helpful in getting the job done	.65	.82

Values in 'Cronbach's Alpha if item deleted' column printed in boldface identify questions for which deletion would lead to an improvement of the Cronbach's Alpha.

The Cronbach's Alpha for the combined dimension decision latitude is better than the Cronbach's Alpha for the two dimensions (skill discretion and decision authority) separately. In fact, separately, the two dimensions do not meet the minimum requirement of 0.7, while combined this requirement is met. This would provide a strong argument to use the dimension decision latitude as one dimension and not as two separate dimensions in inferential statistical analyses.

There are no issues with the dimension co-worker support: the Cronbach's Alpha is sufficiently high, the 'Alpha if item deleted' values do not prompt for deletion of one or more questions and the Item-total Correlation values are all positive and sufficiently high.

The dimension measuring psychological job demands is weaker. The Cronbach's Alpha value is 0.05 short of meeting the threshold of 0.7. Deletion of the last question (I am free from conflicting demands others make) would improve the Cronbach's Alpha and it would make the Cronbach's Alpha value meet the threshold. Although all Item-total Correlation values are positive and generally sufficiently high, the value is relatively low for the last question. This implies that deletion of the last question should be considered, depending on the outcome of the factor analysis, of which the outcome is presented in Table 5-4 below.

Table 5-4: Factor loadings in factor analyses for validation of the Job Content Questionnaire components with Skill Discretion and Decision Authority as separate factors

	Component loading in Pattern Matrix (Oblimin)					Component loading in Component Matrix (Varimax)			
Question	**SD**	**DA**	**PsyD**	**CS**		**SD**	**DA**	**PsyD**	**CS**
SD1	**.59**	.36	.09	.10		**.60**	.27	.05	.15
SD2	*.07**	***.50****	*.12*	*.02*		*.08**	***.48****	*.08*	*.03*
SD3	**.63**	.15	.06	.02		**.63**	.08	.08	.09
SD4	**.64**	.09	.22	.06		**.65**	.03	.24	.12
SD5	**.60**	.05	.16	.02		**.60**	.10	.17	.09
SD6	**.62**	.28	.14	.07		**.61**	.37	.14	.15
DA1	***.64****	*.32**	*.10*	*.03*		***.62****	*.41**	*.11*	*.06*
DA2	*.20*	**.67**	.15	.00		.18	**.70**	.20	.06
DA3	.45	**.54**	.11	.08		.44	**.61**	.14	.16
PsyD1	.15	.02	**.65**	.03		.17	.07	**.65**	.04
PsyD2	.14	.09	**.78**	.04		.17	.02	**.77**	.05
PsyD3	.05	.01	**.74**	.04		.03	.11	**.74**	.06
PsyD4	.11	.04	**.71**	.01		.08	.13	**.70**	.04
PsyD5	*.08*	***.50****	*.10**	*.08*		*.08*	***.51****	*.14**	*.10*
CS1	.04	.00	.07	**.80**		.10	.06	.07	**.78**
CS2	.00	.06	.01	**.85**		.15	.14	.02	**.84**
CS3	.01	.01	.04	**.86**		.14	.07	.04	**.84**
CS4	.01	.01	.09	**.78**		.15	.08	.09	**.78**

For each question the value with the strongest component loading is printed in boldface.
An asterisk (*) is used to identify questions for which the loading on the intended factor is lower than the loading on another factor.

In Table 5-4 above, the four dimensions can be distinguished, however, the dimension co-worker support is the only dimension for which all questions load as expected. Especially the distinction between skill discretion and decision authority appears to be somewhat problematic, since one skill discretion question (SD2) loads much stronger on decision authority, while at the same time, a decision authority question (DA1) loads much stronger on skill discretion. In addition, one question that is supposed to measure the dimension psychological demands, loads much stronger on another dimension (decision authority).

All in all, the factor analyses reveal some issues with the validation of the 18 questions measuring four distinct dimensions. In order to test, whether combining the two dimensions to one, as suggested by the JCQ manual, would improve the factor analysis results, the factor analyses were rerun; this time with the fixed number of factors to extract set to three instead of four. The results of these factor analyses are presented in Table 5-5 below. In the factor analysis with Oblimin rotation, rotation converged in nine iterations. In the factor analysis with Varimax rotation, four iterations sufficed.

Table 5-5: Factor loadings in factor analyses for validation of the Job Content Questionnaire components with Skill Discretion and Decision Authority combined to Decision Latitude

	Component loading in Pattern Matrix (Oblimin)				**Component loading in Component Matrix (Varimax)**		
Question	**DL**	**PsyD**	**CS**		**DL**	**PsyD**	**CS**
DL1	**.42**	.14	.09		**.44**	.10	.15
DL2	*.12**	***.16****	*.02*		*.12**	***.17****	*.04*
DL3	**.56**	.16	.02		**.56**	.13	.09
DL4	**.61**	.28	.05		**.62**	.24	.13
DL5	**.61**	.15	.01		**.61**	.11	.09
DL6	**.67**	.24	.06		**.67**	.29	.15
DL7	**.72**	.23	.04		**.70**	.27	.06
DL8	*.40**	***.48****	*.01*		.39*	**.51***	.06
DL9	**.60**	.36	.07		**.60**	.40	.16
PsyD1	.23	**.62**	.04		.24	**.61**	.05
PsyD2	.28	**.69**	.05		.30	**.67**	.07
PsyD3	.06	**.70**	.03		.06	**.69**	.04
PsyD4	.02	**.68**	.00		.01	**.68**	.02
PsyD5	.08	**.36**	.08		.09	**.37**	.10
CS1	.05	.06	**.81**		.12	.02	**.78**
CS2	.00	.05	**.85**		.18	.09	**.84**
CS3	.02	.04	**.87**		.16	.01	**.84**
CS4	.02	.09	**.80**		.14	.13	**.78**

For each question the value with the strongest component loading is printed in boldface.
An asterisk (*) is used to identify questions for which the loading on the intended factor is lower than the loading on another factor.

The results of the three dimensions factor analyses are much better than the four dimensions factor analyses. Both psychological job demands and co-worker support now load fully as expected. The combined decision latitude dimension still has two incorrect loadings, but these two loadings are now much closer to the expected loadings. Despite a small reduction in the cumulative sum of squared loadings (from 52.8% to 46.4%), the factor analysis with three dimensions yields better results than the factor analysis with four dimensions.

The combination of the outcome of the Reliability Analysis and the Factor Analysis leads to the decision to not use skill discretion and decision authority as two separate dimensions in statistical analyses, but the combined dimension decision latitude instead.

The unsatisfactory outcome of the Reliability Analysis of the dimension psychological job demands is supported by the first Factor Analysis (four dimensions), but not by the second (three dimensions). All questions load on the right dimension. Since the decision was made to use three dimensions, the outcome of the second Factor Analysis is of greater relevance. This has led to the decision to not alter the dimension psychological job demands by deleting this one question. The Factor Analysis provides sufficient support for the questions composition as suggested in the JCQ manual.

5.3 Personal, professional and practice characteristics and their influence on MBI score

In this section, the associations between personal, professional and practice characteristics, and MBI subscale scores are investigated, as illustrated by Figure 3-6 below (inferential analysis step 1).

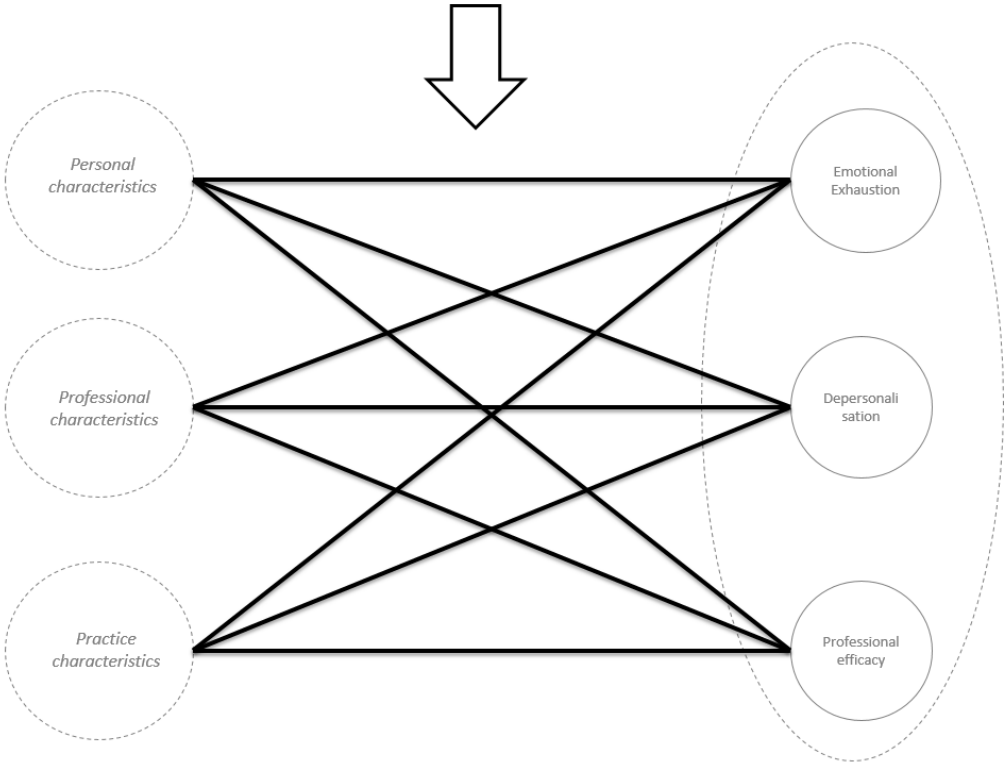

Figure 3-6: Visualisation of the part of the empirical model that is analysed in 'Inferential analysis step 1'

The association between age and gender and the MBI subscales is examined first, in order to determine whether or not subsequent analyses should correct for age and / or gender (Section 5.3.1, below). After the analysis of the association between age and gender and the MBI subscales, the association between other personal, professional and practice characteristics is examined. Significant and sufficiently strong (explaining >1% of variation) associations are reported in Section 5.3.2 (p. 124). Findings that are significant, but have a lesser relevance (very small explanatory power) are reported in Section 5.3.3 (p. 128).

5.3.1 Age and gender and their association with MBI subscale scores

In order to examine whether or not scores on MBI subscales differ for male and female respondents, t-Tests were carried out to compare the average

scores on each subscale. The results of these analyses are presented in Table 5-6 below.

Table 5-6: Comparison of male and female respondents' average score on MBI subscales

MBI subscale	M_{male}	SD_{male}	M_{female}	SD_{female}	t	p
Emotional Exhaustion	2.06	1.172	2.17	1.03	1.81	.08
Depersonalisation	1.31	.880	1.17	.78	3.17	**.00**
Professional efficacy	4.80	.736	4.79	.72	.26	.80

A significant difference only exists for depersonalisation. Male respondents have significantly higher depersonalisation scores than female respondents. These findings are in line with what one would expect, considering the fact that Schaufeli and van Dierendonck (2000) recommend the use of one reference table for emotional exhaustion and professional efficacy scores, while for depersonalisation separate reference tables exist for males and females, with a higher midpoint for males.

In order to examine the association between age and the scores on the three MBI subscales, correlation analyses were carried out between age and each of the MBI subscales. Separate analyses were carried out for all respondents, male and female respondents. The results are presented in Table 5-7 below.

Table 5-7: Correlation between age and score on MBI subscales

	All respondents		Male respondents		Female respondents	
MBI subscale	**r**	**p**	**r**	**p**	**r**	**p**
Emotional Exhaustion	**-.13**	**.00**	**-.16**	**.00**	-.07	.14
Depersonalisation	**-.10**	**.00**	**-.19**	**.00**	-.08	.09
Professional efficacy	.03	.30	.03	.41	.03	.49

The results show, that emotional exhaustion and depersonalisation decrease with age. This (negative) correlation can be established for male respondents as well as for all respondents, albeit that the r-value for all respondents is lower. For female respondents, such an association does not exist.

Since emotional exhaustion and depersonalisation are associated with age (at least for male respondents), this association is thus examined in further detail. For this analysis the respondents' age was classified in 5-year age categories. For each category, the average scores on the MBI subscales were calculated. Table 5-8 below lists the average MBI subscale score for each category. These values are graphically presented in Figure 5-1 (p. 123).

Table 5-8: Average MBI subscale scores for different age categories

Age category	Avg. EE score	Avg. Dep score	Avg. PE score
≤35 years	2.25	1.33	4.87
36-40 years	2.22	1.30	4.81
40-45 years	2.32	1.39	4.67
46-50 years	2.19	1.30	4.75
51-55 years	2.12	1.28	4.84
56-60 years	1.95	1.20	4.84
60+ years	1.83	1.04	4.83

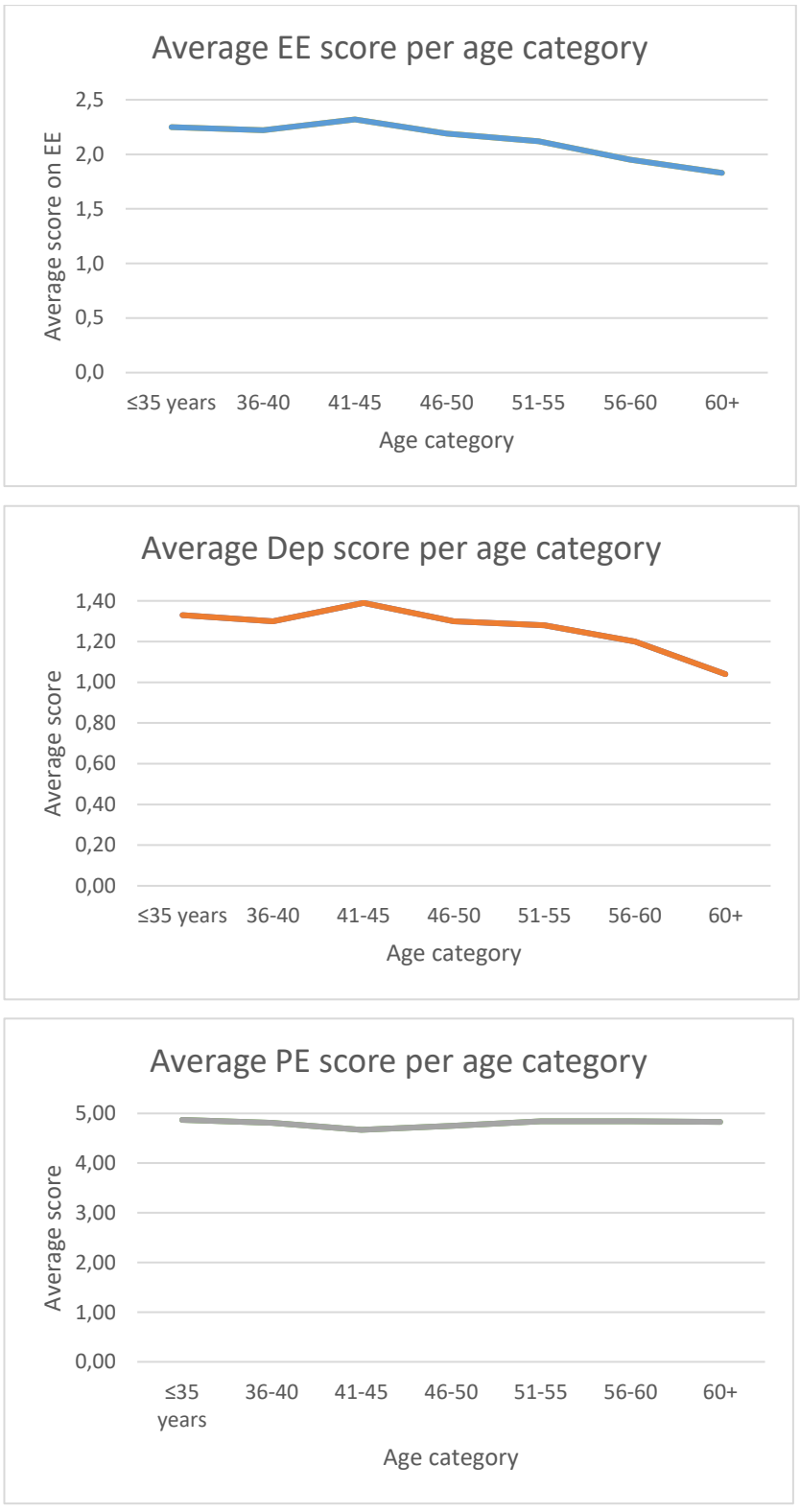

Figure 5-1: Average MBI subscale scores per age category

In Figure 5-1 (p. 123), the overall negative slope of the lines for emotional exhaustion and depersonalisation corresponds to the found negative correlation between age and MBI subscale score. Also in this figure (Figure 5-1), another element can be seen. There appears to be a small, yet clearly visible, peak in the scores for emotional exhaustion and depersonalisation for the age category 41-45. This peak coincides with a slight dip in the graph for professional efficacy. The data show, that in the age category 41-45 unfavourable scores on all three subscales occur more frequently.

Given the gender difference for depersonalisation scores, and the correlation between age and emotional exhaustion and depersonalisation scores (at least for male respondents), all reported findings in the next section are based on analyses that are corrected for age and gender.

5.3.2 Associations between personal, professional and practice characteristics and MBI subscale scores

In this section, the association between personal, professional and practice characteristics and MBI subscale scores is examined. In Section 4.3 (p. 92), it was established that several personal, professional and practice characteristics are correlated: e.g. a practice owner generally works more days and hours per week than a salaried GP, is on average older and more frequently male. Examining the association between these variables and MBI subscale scores using multiple regression analysis, would be problematic due to (multi)collinearity. The large number of nominal variables is a counter indication for analyses such as structured equation modelling. The associations between respondent characteristics and MBI subscale scores are therefore all examined individually as previously discussed in Section 3.6.6 (p. 88).

For interval and ratio type data, variables are analysed using partial correlation (partial because of correction for age and gender). For ordinal and

nominal variables, the associations are analysed using analysis of variance (ANOVA), corrected for age and gender by means of performing N-way ANOVA analyses.

After analysing the associations between all respondents' characteristics and MBI subscale scores individually, significant ($p<.05$) associations that have sufficient explanatory power (≥1% of variation explained => $pr \geq .10$ or $p\eta \geq .10$) are selected and reported in Table 5-9 below. None of the other potential associations combined significance with sufficient explanatory power.

Table 5-9: Found associations between respondent characteristics and MBI subscale scores

Respondent characteristic	Associated with MBI subscale	p-value	pr or pη
Being professionally active outside of GP practice	Emotional exhaustion	p=.00	pη=.11
Job size (days per week)	Emotional exhaustion	p=.00	pη=.11
Hours worked per week	Emotional exhaustion	p=.00	pη=.14
Consultation time	Emotional exhaustion	p=.00	pr=.16

The found associations (as presented above in Table 5-9) are graphically represented in Figure 5-2 below and discussed in further detail after the figure.

In Figure 5-2 (as well as in Figures 5-3 (p. 140), 5-5 (p.146) and 5-6 (p. 155)), the lines indicate associations between variables. The line colour corresponds with the colour given to the burnout dimension (red for emotional exhaustion, blue for depersonalisation and green for professional efficacy; the latter two do not apply for Figure 5-2, but they do apply for figures further in this chapter). The thickness of the line represents the strength of the association: thicker lines indicate stronger association. The dotted grey lines indicate the associations between the different characteristics (collinearity, e.g. days and hours worked per week) or

between the dimensions of burnout. The ‘age and gender’ oval indicates that all associations are corrected for age and gender (hence the reported partial correlation (pr instead of r) and the reported partial eta (pη instead of η).

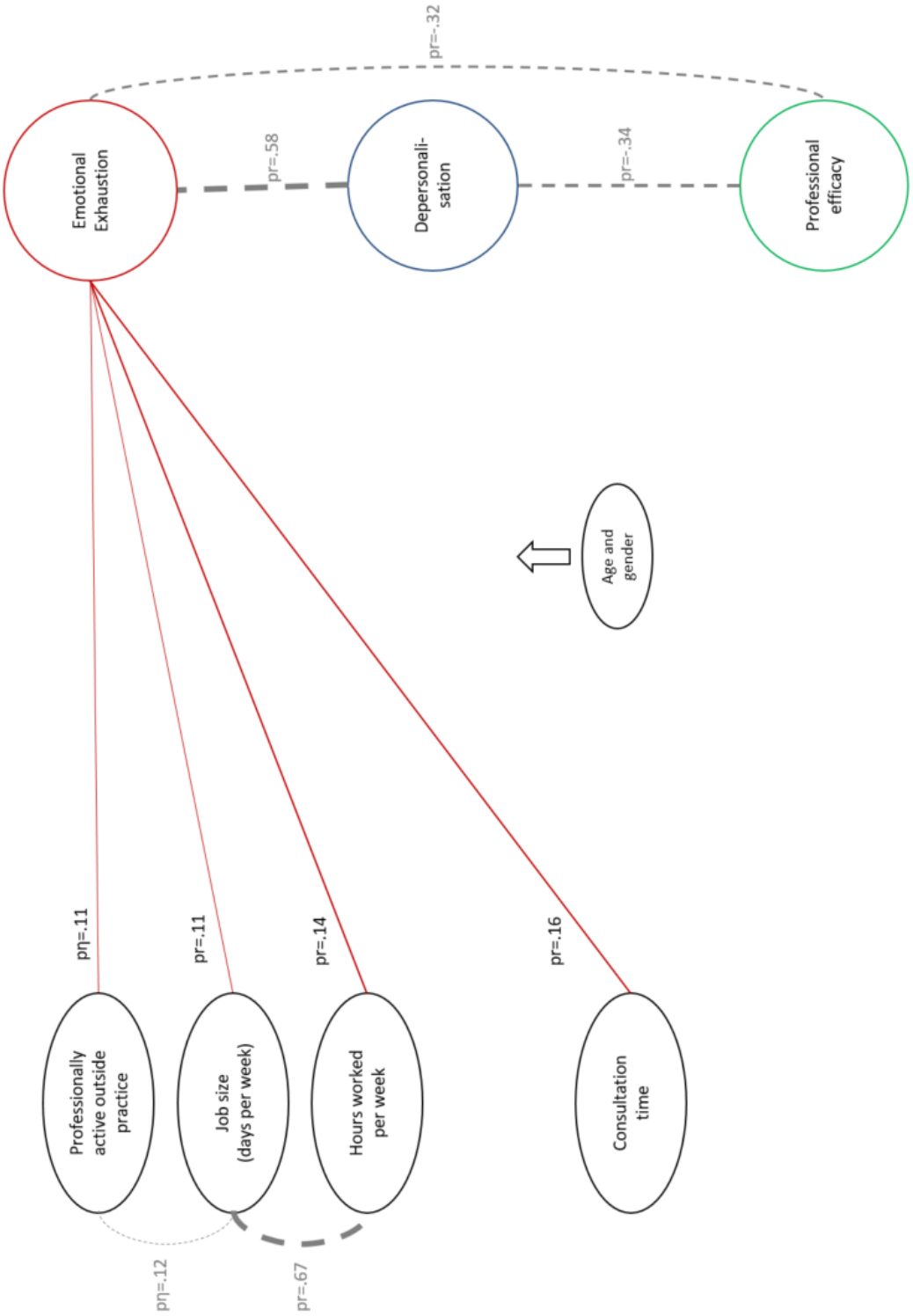

Figure 5-2: Significant (p<.05) and relevant (pr≥.10 or pη≥.10) associations between respondent characteristics and MBI subscale scores

None of the examined characteristics are directly associated with depersonalisation or professional efficacy, at least not with an explanatory power of more than 1%. Besides the moderating variables age and gender, four characteristics are directly associated with the respondent's emotional exhaustion score. Found significant associations with limited explanatory power are discussed in Section 5.3.3 (p. 128).

The amount of days or hours worked per week is significantly associated with the score on emotional exhaustion. The results show, that the longer the working week reported by the respondent, the higher the score on emotional exhaustion. Hours per week has a stronger correlation (pr=.14) with emotional exhaustion than days per week (pr=.11).

GPs who are professionally active outside their own practice report significantly (p=.00) lower levels of emotional exhaustion (M=1.9, SD=1.12) than GPs who only work within their own practice (M=2.2, SD=1.11). Although GPs who are professionally active outside their own practice on average have a somewhat smaller job size (cf. also Section 4.3, p. 96), an N-way ANOVA reveals, that the variation in emotional exhaustion cannot only be ascribed to the reduced job size. Being professionally active outside of one's own practice is associated with lower emotional exhaustion scores, independent of job size.

The results indicate, that a longer consultation time (i.e. seeing less patients per hour) is associated with higher reported levels of emotional exhaustion (pr=.16). Since this finding is counterintuitive at first glance, this association is examined in greater detail. The responses collated indicate, that consultation time is negatively associated with the number of years of work experience acquired (r=-.06, p=.04). More experienced GPs reported, that they have shorter consultation durations. This association, however, is very weak, despite its statistical significance. Consultation time is significantly

associated with the amount of hours worked per week (pr=.09, p=.00). GPs that report a longer consultation time (a lower work pace) work more hours per week.

Consultation time is also significantly negatively associated with the amount of registered patients per FTE GP (pr=-.12, p=.00). Respondents who have a smaller practice size report a longer consultation time.

5.3.3 Other findings

In the previous section, four respondent characteristics were identified that are significantly associated with (one of the) MBI subscale scores with an explanatory power of at least 1%. These are: 1) being professionally active outside one's own practice, 2) number of days per week worked, 3) number of hours per week worked and 4) consultation duration. There are more characteristics that are statistically significantly associated with MBI scores, albeit that these associations are weak, despite their significance. In addition, some associations appear to exist based on descriptive statistics, but these associations fail to reach significance. Both types of findings are discussed in this section.

5.3.3.1 Personal characteristics

Being in a steady relationship

As shown in the findings, respondents who are in a relationship appear to score more favourably on all three subscales of the MBI: they report less emotional exhaustion (M=2.09, SD=.032 compared to M=2.29, SD=.157) and less depersonalisation (M=1.25, SD=.825 compared to M=1.38, SD=.833) as well as a higher score for professional efficacy (M=4.81, SD=.728 compared to M=4.64, SD=.726). The observed differences are, however, not significant (EE: t=1.27, p=.21; Dep: t=1.27, p=.21; PE: t=1.81, p=.07). This could imply that the observed differences are to be discarded. At the same time, all

observed differences are in the same direction (i.e. in the direction of a more favourable score when in a relationship). It should also be noted, that only 64 respondents answered 'no' to the question inquiring about their relationship status, while 1,228 answered 'yes'. The small number of GPs not in a relationship might be an impediment to reaching significance. The analysis was therefore repeated, this time comparing percentages of respondents with an unfavourable score for GPs with and without a steady relationship. The results of this analysis are presented below in Table 5-10 below.

Table 5-10: Comparison between respondents with and without a steady relationship on the percentage of respondents with an unfavourable MBI score

	Respondents in a steady relationship	**Respondents <u>not</u> in a steady relationship**
Percentage of respondents with a (very) high score on EE	26.8%	34.4%
Percentage of respondents with a (very) high score on Dep	20.9%	25.5%
Percentage of respondents with a (very) low score on PE	6.6%	9.4%

Table 5-10 appears to lead to a similar conclusion regarding the beneficial effect of being in a steady relationship. Respondents who are not in a relationship have a higher probability of scoring unfavourable on all three MBI subscales. However, a Pearson Chi-square Test failed to reach significance for all three subscales (EE: χ^2=1.76; p=.19; Dep: χ^2=.61; p=.44; PE: χ^2=.76; p=.384. These non-significant findings are revisited in Section 5.4 (p. 134), in which demands and resources are explicitly addressed.

<u>Having children</u>

Having children has no independent association with MBI subscale scores. Although GPs with children report higher levels of depersonalisation (M=1.31, SD=.86) than GPs without children (M=1.15, SD=.72), a three-way ANOVA, correcting for age, reveals that this difference is not significant.

5.3.3.2 Professional characteristics

Type of employment

When the scores on emotional exhaustion, depersonalisation and professional efficacy are compared for GPs in in different types of employment, one can observe, that practice owning GPs report the highest level of emotional exhaustion, while GPs who are employed by practice owning GPs report the lowest level of emotional exhaustion. Locum GPs and GPs who are employed by healthcare providers report scores in between. GPs who are employed by practice owning GPs also report the lowest depersonalisation score. They also report the highest score on professional efficacy. The average scores on emotional exhaustion, depersonalisation and professional efficacy for the different employment types are shown in Table 5-11 below.

Table 5-11: Average EE, Dep and PE scores for different employment types

Type of employment	EE		Dep		PE	
	M	SD	M	SD	M	SD
Practice (co)owner N=1240	2.11	1.12	1.26	0.83	4.79	0.73
Salaried GP (employed by healthcare proving organisation) N=12	2.09	1.20	1.52	0.99	4.06	0.55
Locum GP N=27	1.79	1.13	1.19	0.64	4.87	0.71
Salaried GP (employed by practice owning GP) N=12	1.45	0.87	0.83	0.45	5.10	0.55

The observed difference in average scores reported in Table 5-11 are not significant. When an ANOVA test was conducted there was no significance for emotional exhaustion ($F=1.72$, $p=.14$), nor for depersonalisation ($F=1.17$, $p=.32$), nor for professional efficacy ($F=1.10$, $p=.35$). Since this might be due to the low number of GPs in categories other than practice (co)owner, the averages were also compared one-on-one by means of an Independent Samples t-Test. These results were inconclusive. Some comparisons resulted in significant differences (e.g. comparison of mean emotional exhaustion score between the categories practice (co)owner and salaried GP

employed by practice owner (t=2.61, p=.02), while other comparisons resulted in insignificance of the differences (e.g. comparison of mean emotional exhaustion score between the categories practice (co)owner and locum GPs: t=1.47, p=.14). The results are therefore - at best - indicative of an existing difference in the population. Practice owners appear to have the highest emotional exhaustion score, but the findings are inconclusive.

Specialisation

GPs who have specialised in a particular domain within general practice (e.g. diabetes care or geriatrics), report on average more favourable scores on all three MBI subscales: lower emotional exhaustion, lower depersonalisation and higher professional efficacy. These findings are presented in Table 5-12 below.

Table 5-12: Average EE, Dep and PE scores for GPs who have (not) specialised within the field of general practice

Specialisation yes/no	**EE**		**Dep**		**PE**	
	M	SD	M	SD	M	SD
GPs with specialisation N=371	2.01	1.05	1.24	0.82	4.84	0.68
GPs without specialisation N=923	2.14	1.14	1.26	0.83	4.78	0.75

Not all differences that are reported in Table 5-12 are significant. While the difference in average emotional exhaustion scores is significant (t=2.04, p=.04), the difference is not significant for depersonalisation (t=.34, p=.74) and for professional efficacy (t=4.52, p=.13). After correcting for age by means of a Multiple Linear Regression (MLR) analysis, the found difference in emotional exhaustion scores is no longer significant. It is therefore concluded that, although GPs with a specialisation on average report more favourable scores, an association between MBI scores and having a specialisation cannot be established.

5.3.3.3 Practice characteristics

Practice size

In order to examine the influence of practice size, a correlation analyses was performed on the three MBI subscales, each in relation to the following variables: number of GPs, FTE GPs, number of practice nurses, FTE practice nurses, number of practice assistants, FTE practice assistants. The results of these analyses are presented in Table 5-13 below.

Table 5-13: Correlation matrix for practice size variables and MBI subscale scores

		EE	Dep	PE
Number of GPs	Pearson correlation	-.04	-0.2	.00
	Sig. (2-tailed)	.16	.40	.94
FTE GPs	Pearson correlation	-.02	.03	-.03
	Sig. (2-tailed)	.48	.33	.37
Number of practice nurses	Pearson correlation	-.04	-.01	.03
	Sig. (2-tailed)	.15	.76	.25
FTE practice nurses	Pearson correlation	-.02	.03	-.00
	Sig. (2-tailed)	.48	.46	.97
Number of practice assistants	Pearson correlation	**-.06**	-.05	.02
	Sig. (2-tailed)	**.03**	.06	.55
FTE practice assistants	Pearson correlation	**-.07**	-.02	-.01
	Sig. (2-tailed)	**.05**	.65	.75
Significant (p<.05) correlations are printed in boldface				

The number of GP colleagues appears to be of no relevance, as is the number of practice nurses. The number of practice assistants, however, is significantly negatively correlated with the GP's score on exhaustion. This association is revisited in Section 5.4 (p. 134), in which demands and resources, including co-worker support, are explicitly addressed.

Walk-in open access

At first glance, having a walk-in open access appears to have a positive effect on all three MBI subscale scores, as demonstrated in Table 5-14

below. GPs who have a walk-in open access have a more favourable score on all three MBI subscales in comparison to GPs who do not have a walk-in open access.

Table 5-14: Average EE, Dep and PE scores for GPs who do (not) have a walk-in open access

	EE		Dep		PE	
	M	SD	M	SD	M	SD
GPs <u>with</u> walk-in open access N=146	1.92	1.11	1.16	0.83	4.87	0.74
GPs <u>without</u> walk-in open access N=1142	2.13	1.11	1.27	0.83	4.79	0.73

The difference for emotional exhaustion is significant (t=2.13, p=.03), while the differences for depersonalisation (t=1.50, p=.16) and professional efficacy (t=1.27, p=.21) are not. After correcting for age by means of a MLR, the found difference for emotional exhaustion loses its significance. It is therefore concluded that (not) having a walk-in open access is not significantly associated with MBI scores.

<u>Practice environment and patient mix</u>

Using the practice's ZIP-code, data on the practice environment was collected using secondary data sources. This data not only serves as an indicator for the environment in which the practice is located, it also serves as an indicator for the practice's patient mix (composition of the patient population), since several variables consist of health data of the population surrounding the practice. In Table 5-15 below, the associations between these environmental variables and the respondents' MBI scores are presented.

Table 5-15: Correlation matrix for practice size variables and MBI subscale scores

		EE	Dep	PE
Socio economic status	Pearson correlation	.02	-.02	-.02
	Sig. (2-tailed)	.55	.45	.56
% patients with three or more chronic diseases	Pearson correlation	**.07**	.05	-.03
	Sig. (2-tailed)	**.02**	.11	.30
% patients with experienced (moderately) bad health	Pearson correlation	-.04	.02	.01
	Sig. (2-tailed)	.12	.49	.65
Relative GP density	Pearson correlation	-.03	-.06	-.05
	Sig. (2-tailed)	.40	.06	.17
Number of GP-patient contact minutes per FTE GP	Pearson correlation	.01	.03	.04
	Sig. (2-tailed)	.89	.34	.22
Significant (p<.05) correlations are printed in boldface				

In Table 5-15, it can be observed, that most variables are not associated with the respondents' MBI scores. The only found significant association is a positive correlation between the percentage of chronically ill and the GP's emotional exhaustion score. It should be noted, though, that the correlation is very weak, explaining less than half a percent in emotional exhaustion score variation.

5.4 The role of demands and resources

In this section, the role of demands and resources is examined. This is done in two separate analyses (Inferential analysis steps 2 and 3, cf. Section 3.6.6, p. 83). First, the association between the respondents' demands and resources and MBI scores is analysed (Section 5.4.1, p. 135), after which the association between the GPs' demands and resources and the respondents' characteristics is analysed (Section 5.4.2, p. 141). An overview of the findings of these analyses is presented in Section 5.5 (p. 151).

5.4.1 Demands and resources and their association with MBI scores

Before the association between respondents' characteristics and demands and resources is examined, it is relevant to verify that the demands and resources are indeed associated with the three MBI dimensions emotional exhaustion, depersonalisation and professional efficacy. This analysis, step 2 of the inferential analysis, is illustrated in Figure 3-7 below.

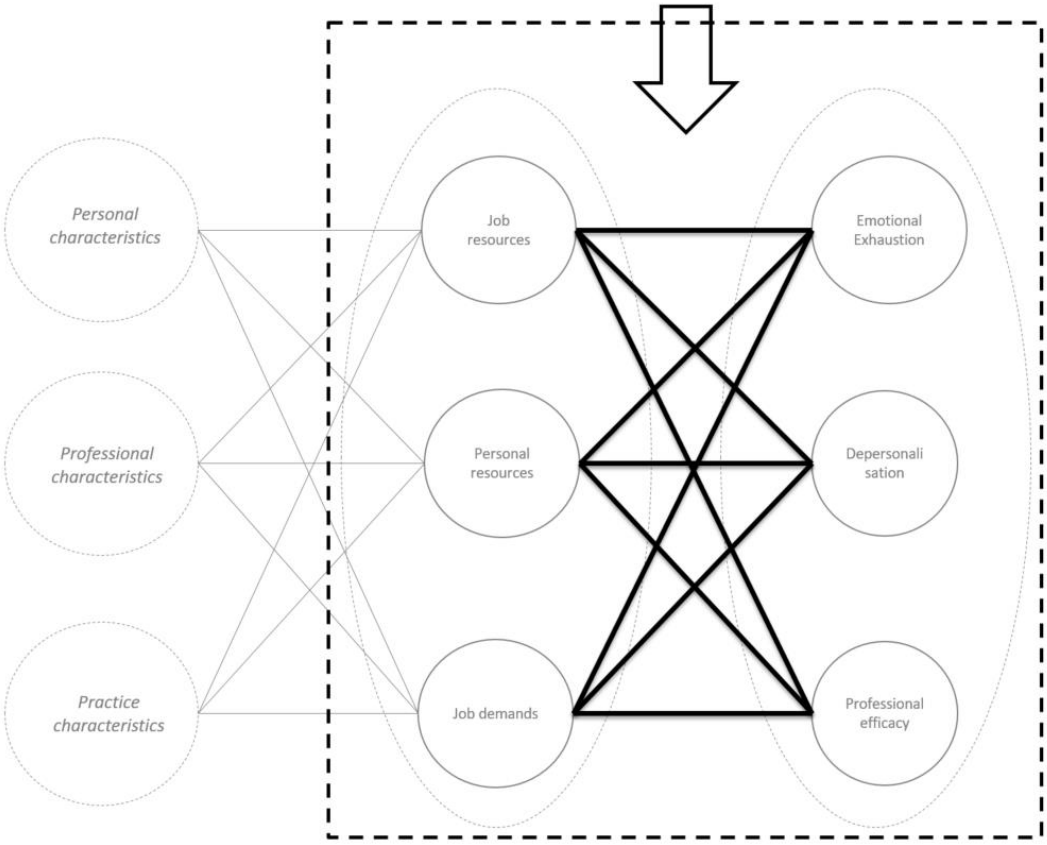

Figure 3-7: Visualisation of the part of the empirical model that is analysed in 'Inferential analysis step 2'

As previously indicated in Section 3.6.6 (p. 85), for the demands and resources that were calculated using a multiple question measurement (i.e. psychological job demands, decision latitude and co-worker support) a Pearson Correlation analysis (corrected for age and gender) was carried out between these three variables and the MBI subscale scores. For the demands and resources that were measured using a single question (i.e. administrative burden, work-home conflict and home support) correlation

would not be appropriate, since this variable is ordinal in nature. For these three variables, an Analysis of Variance (ANOVA) was performed (three way ANOVA in order to correct for age and gender). The results of the Pearson Correlations, corrected for age and gender (partial correlation), are presented in Table 5-16 below. The results of the ANOVA analyses are presented in Table 5-17 (p. 137).

Table 5-16: Correlation matrix for demands and resources and MBI subscale scores, corrected for age and gender

		EE	Dep	PE
Psychological job demands	pr (partial correlation)	**.47**	**.26**	**-.10**
	p-value (2-tailed)	**.00**	**.00**	**.00**
Decision latitude	pr (partial correlation)	**-.33**	**-.30**	**.39**
	p-value (2-tailed)	**.00**	**.00**	**.00**
Co-worker support	pr (partial correlation)	**-.16**	**-.14**	**.18**
	p-value (2-tailed)	**.00**	**.00**	**.00**
Significant (p<.05) correlations are printed in boldface				

As can be observed in Table 5-16, all correlations are significant. An increase in psychological job demands is significantly correlated with an increase in emotional exhaustion and depersonalisation and a decrease in professional efficacy. An increase in decision latitude is significantly correlated with a decrease in emotional exhaustion and depersonalisation and an increase in professional efficacy. Finally, an increase in co-worker support is significantly correlated with a decrease in emotional exhaustion and depersonalisation and an increase in professional efficacy. An increase in job demands (psychological job demands) is associated with less favourable scores, while an increase in resources (decision latitude and co-worker support) is associated with more favourable scores.

Table 5-17 lists the results of the ANOVA analyses for single item measured demands and resources, corrected for age and gender. Eight out of nine

ANOVA analyses result in significant differences for different levels of demands and resources.

Table 5-17: ANOVA results for demands and resources and MBI subscale sores, corrected for age and gender in three-way ANOVA

		EE	Dep	PE
Administrative burden	F-value	**72.10**	**6.64**	.35
	p-value.	**.00**	**.01**	.56
	$p\eta^2$	**.06**	**.01**	.00
Work home conflict	F-value	**290.42**	**38.08**	**6.04**
	p-value	**.00**	**.00**	**.01**
	$p\eta^2$	**.20**	**.03**	**.01**
Home support	F-value	**15.25**	**29.78**	**14.10**
	p-value	**.00**	**.00**	**.00**
	$p\eta^2$	**.01**	**.02**	**.02**
Significant (p<.05) associations are printed in boldface				

Differences in experienced administrative burden are not associated with different professional efficacy scores. They are, however, significantly associated with differences in emotional exhaustion and depersonalisation scores. Differences in reported work home conflict and home support are both significantly associated with differences in all three dimension of burnout. Although the ANOVA analyses suggest that administrative burden, work-home conflict and home support are of relevance, the analysis results as such do not provide information on the nature (direction) of the association. In order to gain insight in the nature of the association, the average scores for the different answers to the questions need to be examined in closer detail. Table 5-18 (p. 138) shows the average scores on emotional exhaustion, depersonalisation and professional efficacy for the different answers to the three questions. In Table 5-18, means for which the ANOVA yielded a significant difference, and that are based on at least 20 observations, are printed in boldface in the table.

Table 5-18: Average MBI subscale sores for demands and resources that are measured with a single item measure

			EE	Dep	PE
My job requires me to carry out too much administrative duties	**Strongly disagree** (N=7)	Mean (SD)	2.00 (1.74)	1.66 (1.71)	4.93 (.90)
	Disagree (N=101)	Mean (SD)	**1.51** (1.00)	**1.01** (.70)	4.87 (.80)
	Agree (N=501)	Mean (SD)	**1.91** (1.00)	**1.22** (.78)	4.80 (.72)
	Strongly agree (N=678)	Mean (SD)	**2.33** (1.15)	**1.31** (.85)	4.79 (.72)
My job often competes with my family life for attention and energy	**Strongly disagree** (N=23)	Mean (SD)	**1.08** (.87)	**.92** (.77)	**4.98** (.76)
	Disagree (N=218)	Mean (SD)	**1.35** (.82)	**1.00** (.62)	**4.93** (.70)
	Agree (N=633)	Mean (SD)	**1.99** (1.00)	**1.25** (.81)	**4.79** (.74)
	Strongly agree (N=400)	Mean (SD)	**2.75** (1.09)	**1.44** (.92)	**4.75** (.72)
My family gives me a lot of support	**Strongly disagree** (N=17)	Mean (SD)	2.55 (1.30)	1.42 (.86)	4.83 (.72)
	Disagree (N=131)	Mean (SD)	**2.57** (1.18)	**1.57** (.95)	**4.59** (.74)
	Agree (N=669)	Mean (SD)	**2.05** (1.08)	**1.28** (.82)	**4.73** (.74)
	Strongly agree (N=453)	Mean (SD)	**2.02** (1.11)	**1.13** (.79)	**4.95** (.68)

The values for which the ANOVA revealed significant (p<.05) associations and if N>20 are printed in boldface

When these values are examined, clear patterns emerge. An increase in administrative burden (demand) is associated with an increase in emotional exhaustion and depersonalisation. An increase in work-home conflict (demand) is associated with an increase in emotional exhaustion and depersonalisation and with a decrease in professional efficacy. An increase in home support (resource) is associated with a decrease in emotional exhaustion and depersonalisation and an increase in professional efficacy.

The effects are in some instances small, but the direction of the association between the experienced demands / resources and MBI scores shows a clear pattern: an increase in demands is associated with more unfavourable scores, while an increase in resources is associated with more favourable scores.

The results of the correlations and ANOVA analyses are graphically presented in Figure 5-3 below. Only associations that are significant, and account for at least 1% of MBI subscale score variation, are represented in the figure. In the figure, the effect size is represented by the thickness of the line: the thicker the line, the greater the effect size. The figure also shows the association between the demands and resources themselves (dotted grey lines).

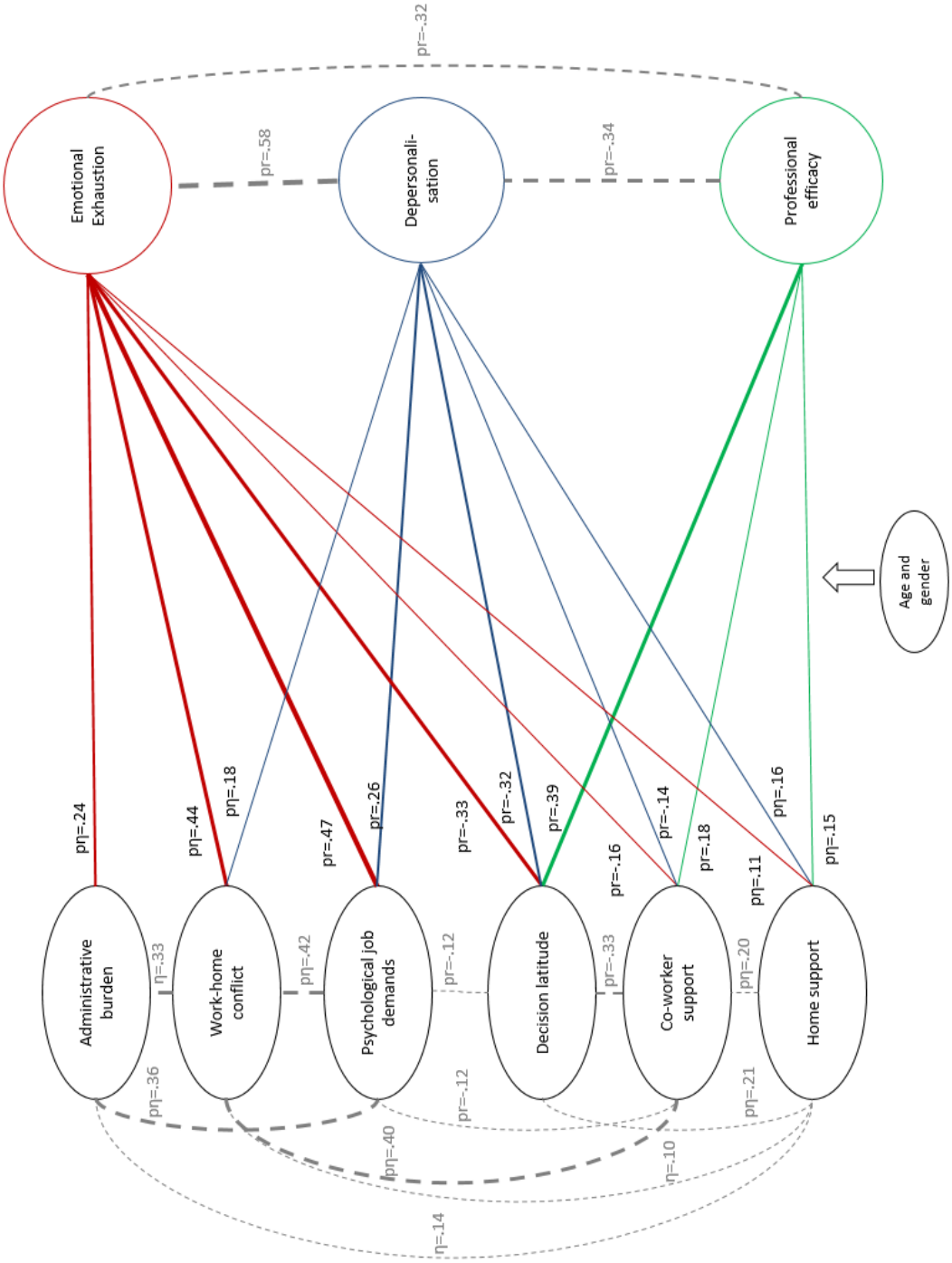

Figure 5-3: Significant (p<.05) and relevant (pr≥.10 or pη≥.10) associations between demands and resources and MBI subscale scores

In Figure 5-3, a pattern in the associations can be seen. While the demands (the top three elements in the left hand column) are predominantly associated with emotional exhaustion, the resources have an effect on all three dimensions of burnout. All demands and resources appear to be of

relevance in explaining burnout variation. In should be noted though, that the effects of the individual associations cannot be added up, given the multicollinearity between the demands and resources.

5.4.2 Personal, professional and practice characteristics and their association with demands and resources

In Section 5.4.1, the relevance of all measured demands and resources was established. In order to further examine the role different respondent characteristics play, the association between all respondent characteristics and the six measured demands and resources is examined. These findings are reported in this section. This analysis constitutes step 3 of the inferential analysis as visualised in Figure 3-8 below.

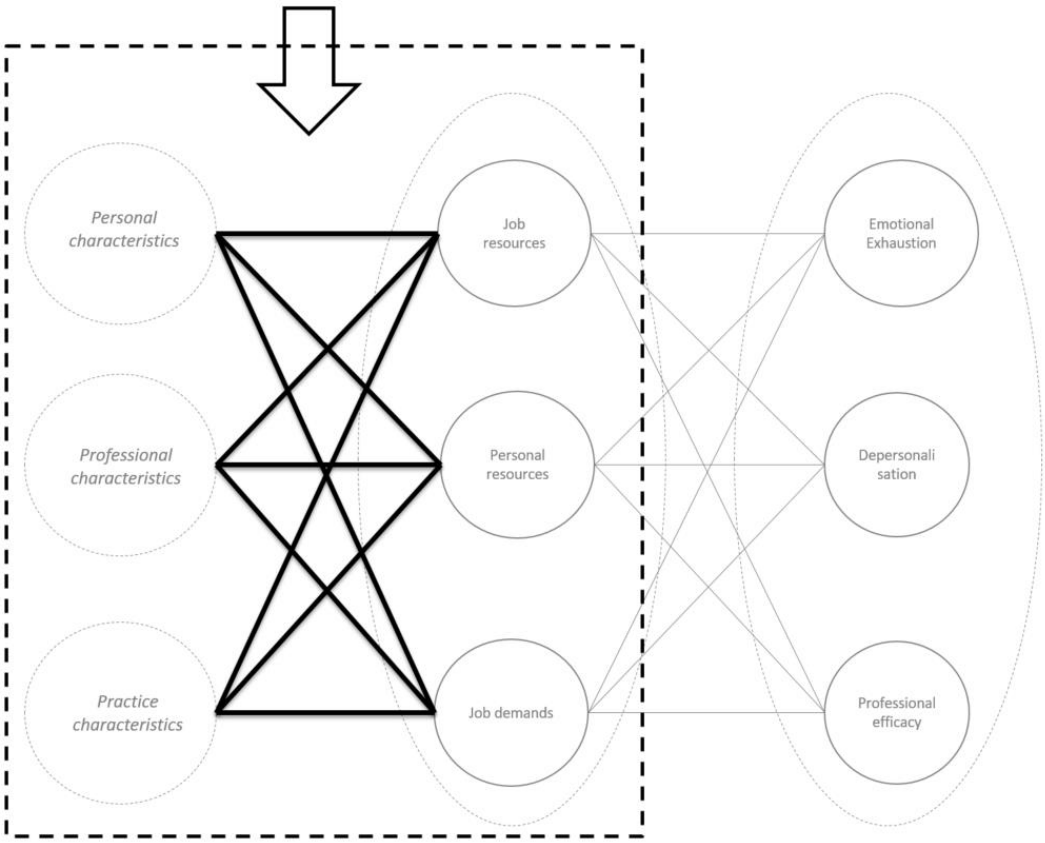

Figure 3-8: Visualisation of the part of the empirical model that is analysed in 'Inferential analysis step 3'

5.4.2.1 Age and gender

In order to establish whether or not analyses must correct for age and gender, the association between age and gender and the six demands and resources is examined first. Age is significantly negatively correlated (r=-.13, p=.00) with psychological job demands. Older GPs report lower psychological demands. On the other hand, older GPs report significantly less co-worker support (r=-.14, p=.00), while decision latitude is not associated with age (r=-.02, p=.44).

Gender appears to be relevant for the experienced psychological job demands (t=2.86, p=.00) and for co-worker support (t=3.20, p=.00). Female GPs report higher levels of psychological job demands (M_f=37.0, M_m=36.2) and higher levels of co-worker support (M_f=12.4, M_m=12.4), but no significant difference is found for decision latitude (t=.25, p=.80).

A partial correlation controlled for gender shows that age is still significantly associated with psychological job demands (pr=-.11, p=.00) and co-worker support (pr=-.12, p=.00). Apparently, age and gender each have their own independent association with psychological job demands and co-worker support.

In Section 5.3.1 (p. 124), it was established, that the correlation between age and MBI scores was not fully linear. The age category 41-45 years appeared to be an age in which unfavourable scores on all three dimensions coincided (cf. Figure 5-1, p. 123). The association between age and psychological job demands and the association between age and co-worker support is therefore examined further. Figure 5-4 below, shows the mean scores on psychological job demands and co-worker support for the different age categories.

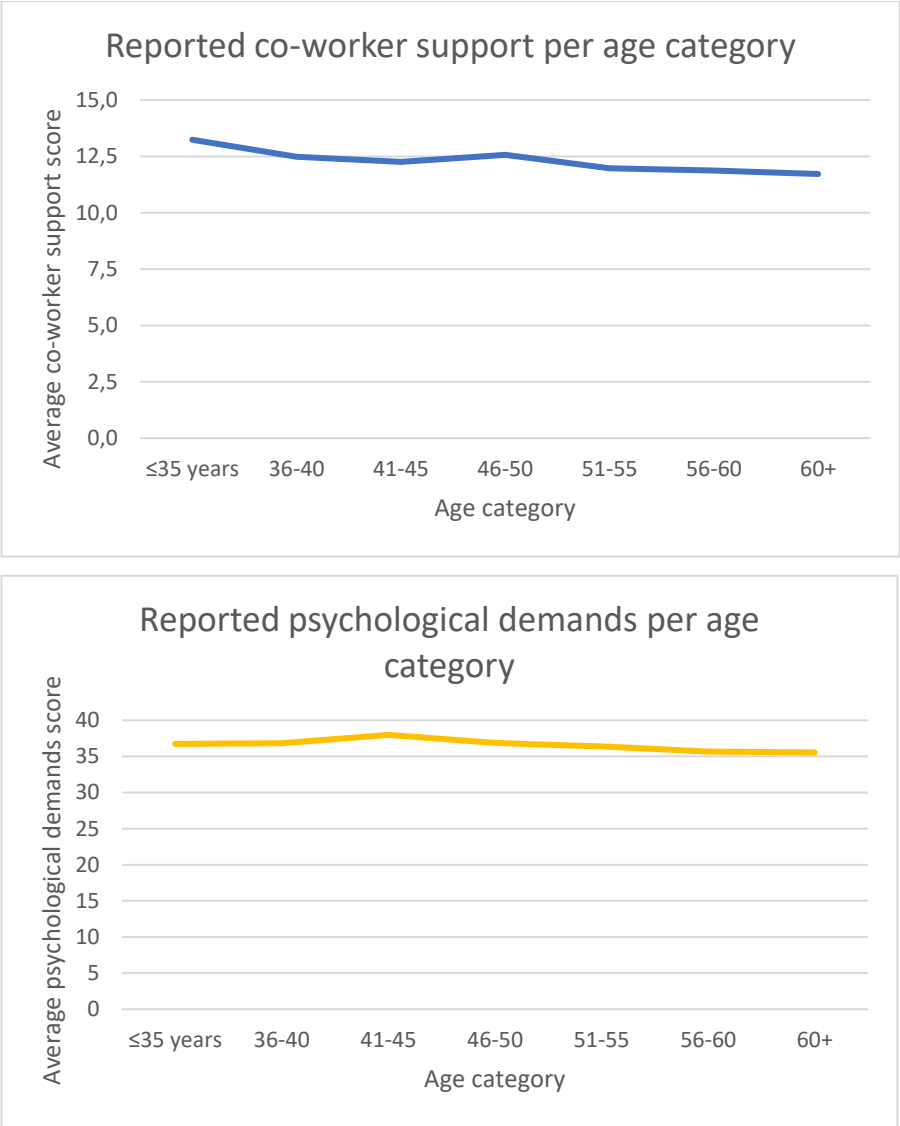

Figure 5-4: Average psychological demands and co-worker support scores per age category

The graph for psychological demands has a similar pattern as the emotional exhaustion and depersonalisation graphs in Figure 5-1 (p. 123): an overall downward slope, but with a slight, yet distinguishable, peak at the age category 41-45. The graph for co-worker support predominantly shows the overall negative association.

The last demands and resources, for which the association with age and gender remain to be examined are administrative burden, work-home conflict

and home support. The findings are presented as follows: administrative burden is not associated with age (F=1.33, p=.26), neither with gender (χ^2=5.06, p=.17). Gender is not associated with work-home conflict (χ^2=3.77, p=.29) or with home support (χ^2=.96, p=.81). Age is significantly associated with work-home conflict (F=11.0, p=.00): younger GPs report more work-home conflicts. Age is not significantly associated with home support (F=2.56, p=.05).

All in all, several demands and resources appear to be associated with age and / or gender. In the subsequent section, the inferential analyses are therefore corrected for age and gender.

5.4.2.2 Other respondent characteristics

Since several demands and resources appear to be associated with age or gender or both, all analyses presented in this section correct for both age and gender. As discussed in Section 3.6.6 (p. 85), if both variables (i.e. the respondent characteristic and the demand or resource) are interval type data, a Pearson Correlation, corrected for age and gender, is carried out. If one of the two was ordinal or nominal, Analysis of variance (ANOVA) is used. If both are ordinal or nominal, a Chi-squared test is used. 17 analyses result in significant associations ($p \leq .05$) that account for at least 1% of variation in demand / resource score. These 17 findings are reported in Table 5-19 (p. 145) and Figure 5-5 (p. 146). The found associations are discussed in further detail after the table and the figure. Associations that fail to meet one of the two criteria, but that are otherwise indicative of an association are discussed in Section 5.4.3 (p. 148).

Table 5-19: Significant (p<.05) and relevant (pr≥.10 or pη≥.10) test results for the association between respondent characteristics and demands and resources, corrected for age and gender

Respondent characteristic	Association with	pr or pη	p-value
Employment type	Administrative burden	pη=.20	p=.00
Hours worked per week	Administrative burden	pη=.20	p=.00
	Work-home conflict	pη=.23	p=.00
	Psychological job demands	pr=.19	p=.00
Job size (days per week)	Administrative burden	pη=.11	p=.00
	Work-home conflict	pη=.13	p=.00
	Psychological job demands	pr=.10	p=.00
	Co-worker support	pr=-.14	p=.00
Working day	Psychological job demands	pη=.10	p=.00
Consultation time	Work-home conflict	pη=.10	p=.00
	Psychological job demands	pr=.11	p=.00
Side job	Decision latitude	pη=.10	p=.00
Practice type	Co-worker support	pη=.17	p=.00
Number GP colleagues	Co-worker support	pr=.15	p=.00
Number practice nurses	Co-worker support	pr=.16	p=.00
Number practice assistants	Co-worker support	pr=.14	p=.00
Being in a relationship	Home support	pη=.27	p=.00

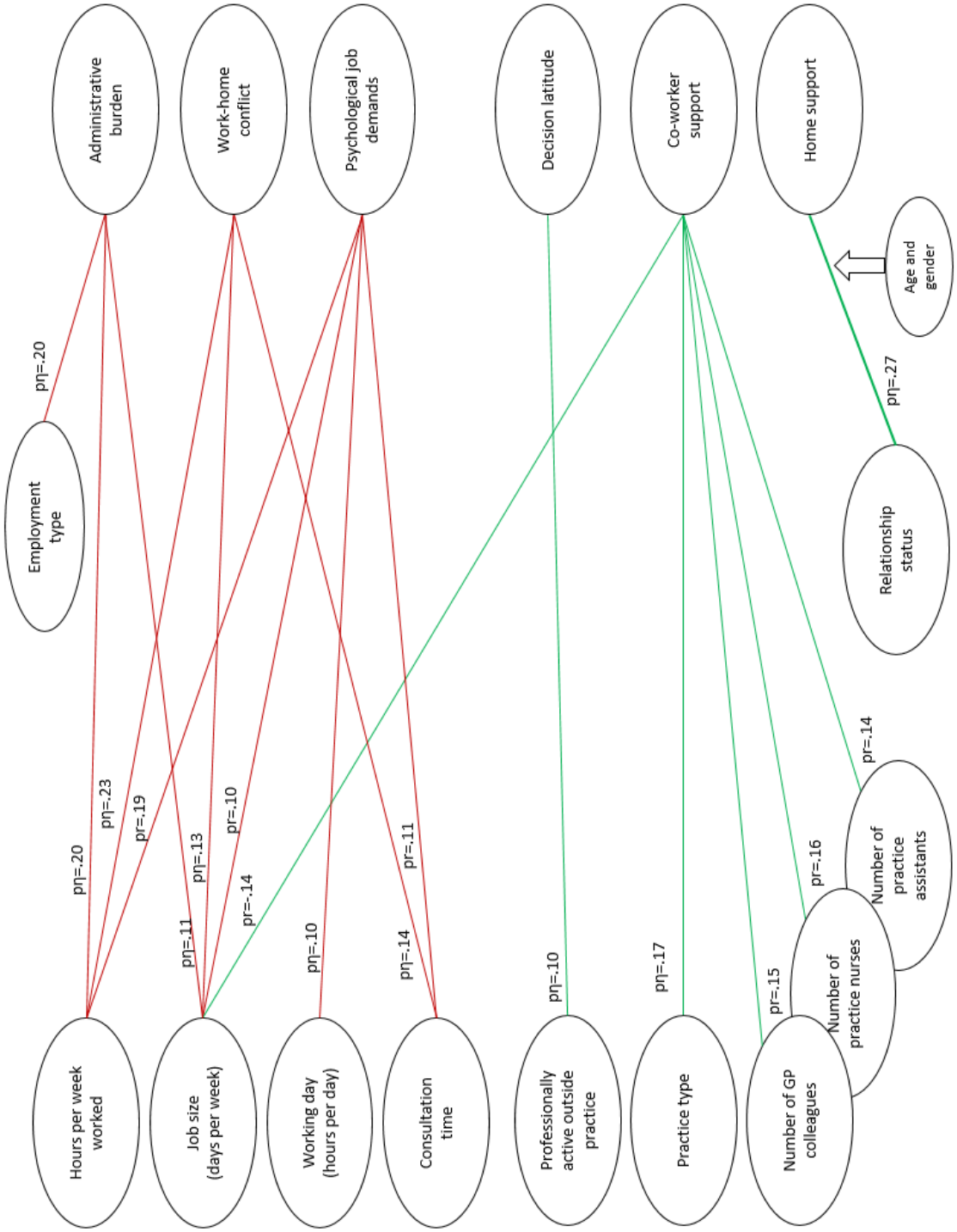

Figure 5-5: significant (p<.05) and relevant (pr≥.10 or pη≥.10) associations between respondent characteristics and demands and resources

All reported associations are significant with a p-value of .00. The effect size, however, is sometimes as low as 1%, barely passing the set threshold.

In Section 5.3.2 (p. 125) four characteristics were identified that were associated with emotional exhaustion: 1) being professionally active outside of one's own practice; 2) job size; 3) hours worked per week and 4) consultation duration. These four characteristics re-emerge in Figure 5.7. Three of those, days per week, hours per week and consultation duration are all time related and are associated with the measured demands.

In Figure 5.7, it becomes clear why the variation in MBI scores for GPs who are or are not professionally active outside one's own practice could not fully be explained by a reduced working week (cf. Section 5.3.2, p. 127). Being professionally active outside one's own practice is associated with a resource, while the time-related characteristics are all related to demands. Respondents who are professionally active outside their own practice report higher levels of decision latitude.

Co-worker support is predominantly associated with characteristics that could be described as practice size (not in number of patients, but in number of colleagues). No matter what type of colleague is examined (fellow GP, practice nurse or practice assistant), respondents who have more colleagues report higher levels of co-worker support. One could argue, that practice type is also a measure for size, since solo-, duo- or group practices by definition differ in size. A GP who works in a solo practice will have no GP colleagues and a limited number of practice nurses or assistants. GPs working in a duo practice will by definition have one GP colleague and a little more support staff, while GPs who work in a group practice, by definition, have more colleagues.

Two associations that can be observed in Figure 5-5 have so far not been mentioned: 1) the association between employment type and administrative burden and 2) the association between relationship status and home support. Employment type is found to be associated with administrative burden in that

respondents who are practice owners report the highest level of administrative burden. Respondents who indicate that they are in a steady relationship, report higher levels of home support.

5.4.3 Other findings

In the previous section, the practice environment was not mentioned. This is due to the fact that none of the examined variables were associated with demands or resources with sufficient effect size. There are, however, some small, yet significant, associations. Table 5-20 below lists the results of the Pearson Correlation analyses that were run to test the association between the practice environment variables and the interval type demands and resources (multiple item measures). Following this, Table 5-21 (p. 149) lists the results of the ANOVA analyses that were run to test the association between the practice environment variables and the ordinal type demands and resources (single item measures).

Table 5-20: Correlation matrix for practice environmental characteristics and demands and resources

		Psychological job demands	Decision latitude	Co-worker support
Socio-economic status	Pearson correlation p-value (2-tailed)	-.02 .53	-.05 .10	**.06** **.03**
≥3 chronic conditions %	Pearson correlation p-value (2-tailed)	.03 .34	-.04 .15	**-.07** **.02**
Poor health %	Pearson correlation p-value (2-tailed)	.01 .84	.03 .30	-.01 .82
Relative GP density	Pearson correlation p-value (2-tailed)	-.01 .82	.02 .49	-.04 .18
Contact minutes per FTE GP	Pearson correlation p-value (2-tailed)	.00 .82	-.00 .93	.04 .23
Significant (p<.05) correlations are printed in boldface				

Table 5-21: ANOVA table for practice environmental characteristics and single item demands and resources

		Administrative burden	Work-home conflict	Home support
Socio-economic status	F-value p-value	2.09 .10	2.56 .05	1.55 .20
≥3 chronic conditions %	F-value p-value	1.44 .23	1.22 .30	.80 .50
Poor health %	F-value p-value	2.00 .11	**4.99** **.00**	1.55 .20
Relative GP density	F-value p-value	1.31 .27	.38 .77	.93 .42
Contact minutes per FTE GP	F-value p-value	**2.74** **.04**	1.27 .29	.75 .52
Significant (p<.05) associations are printed in boldface				

In Table 5-20 (p. 148), two statistically significant correlations are reported. The percentage of patients with more than 3 chronic conditions appears to be negatively correlated with reported co-worker support. Also, the practice's socio-economic environment appears to be associated with the reported level of co-worker support. Further statistical analyses reveal that these correlations cannot be ascribed to variation in GP age, gender, practice type, practice size or any other tested variable. Controlling for any of these variables does not make the significant correlation disappear. It should be noted though, that the effect size of the found associations is very small and that the found associations could be the result of type I error (a false positive).

In Table 5-21 (above), two statistically significant associations are reported: 1) an association between the number of contact minutes per FTE GP and administrative burden and 2) an association between the percentage of patients with a poor health and work-home conflict. In order to examine the association between the experienced administrative burden and the number of contact minutes per FTE GP, the average number of contact minutes is calculated for each answer to the question measuring administrative burden. These findings are presented in Table 5-22 below. In order to further examine the association between the percentage of patients with poor health and the experienced work-home conflict, the average percentage of patients

with poor health for each answer to the question measuring work-home conflict is calculated. These results are presented in Table 5-23 below.

Table 5-22: Average number of contact minutes per FTE GP per answer to the statement measuring administrative burden

			Number of contact minutes per FTE GP
My job requires me to carry out too much administrative duties	**Strongly disagree** (N=4)	Mean (SD)	61,222 (21,840)
	Disagree (N=79)	Mean (SD)	56,404 (20,841)
	Agree (N=369)	Mean (SD)	63,803 (30,307)
	Strongly agree (N=466)	Mean (SD)	58,586 (23,829)

In Table 5-22, no clear pattern can be observed. The significant difference could potentially be ascribed to the very low number of respondents who strongly disagree with the statement and should be discarded because of the lack of a consistent increase or decrease for the different answers to the statement.

Table 5-23: Average percentage of patients with poor general health per answer to the statement measuring work-home conflict

			Poor health %
My job often competes with my family life for attention and energy	**Strongly disagree** (N=22)	Mean (SD)	13.3 (5.93)
	Disagree (N=210)	Mean (SD)	12.3 (4.61)
	Agree (N=616)	Mean (SD)	11.5 (3.54)
	Strongly agree (N=394)	Mean (SD)	11.3 (3.17)

Based on the values reported in Table 5-23, the percentage of patients with poor health appears to be negatively correlated with work-home conflict. Working in a practice with a healthier patient population appears to be associated with increased work-home conflict. The data collected in this study does not provide a rationale as to why these variables would be associated. It should also be noted, that, although there appears to be a consistent pattern, the found differences are small.

5.5 Overview of findings

This section aims to integrate the previously presented analyses in order to provide an overview of the main findings that have been found in steps 1, 2 and 3 of the inferential analysis. The empirical model, presented in Chapter 3 (Figure 3-2, p. 61), is used to visualise the main findings

When the direct association between respondent characteristics and the three dimensions of burnout was investigated, only four relevant characteristics were identified (cf. Figure 5-2, p. 126). When demands and resources were included in the analyses, a richer picture emerges. Combining the found association in Figures 5-2 (p. 126) and 5-3 (p. 140), leads to the overview presented in Figure 5-6 below. Since the emphasis in Figure 5-6 lies on the existence of associations, and not the strength of the associations, the numbers indicating the strength of the associations are removed from the figure. The dotted lines, identifying collinearity are also removed. The thickness of the lines still represents the strength: thicker lines indicate stronger associations.

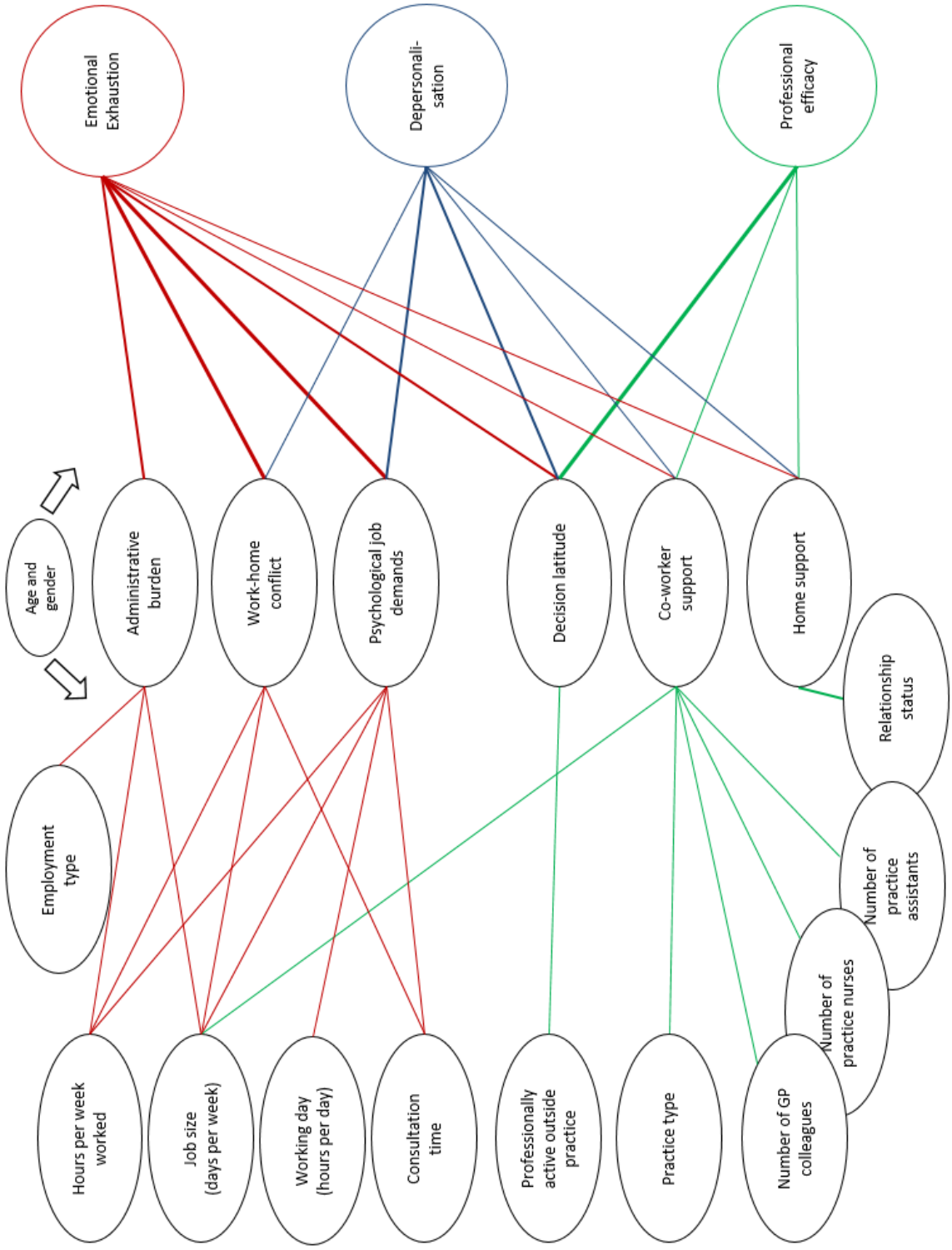

Figure 5-6: significant (p<.05) and relevant (pr≥.10 or pη≥.10) associations between respondent characteristics and demands and resources as well as between demands and resources and the MBI subscale scores

Figure 5-6 (p. 152) has the appearance of a second order model: respondents' characteristics are associated with demands and resources which in turn are associated with the three dimensions of burnout. It should be noted, that the model presented in Figure 5-6 is based on a large number of individual associations, combined in one figure, for which the empirical model served as a template. Would the model have less ordinal and nominal variables, the model as a whole could be put to the test, including calculating the total explanatory power, using techniques such as path analysis or structured equation modelling. With the chosen variables, however, this is technically not feasible as previously discussed in Section 3.6.6 (p. 88). It has also not been the aim of this thesis to validate the model as such.

The figure that is based on the study data (Figure 5-6) is very similar to the empirical model that was proposed in Figure 3-2 (p. 61). The two figures are depicted side-by-side in Figure 5-7 below.

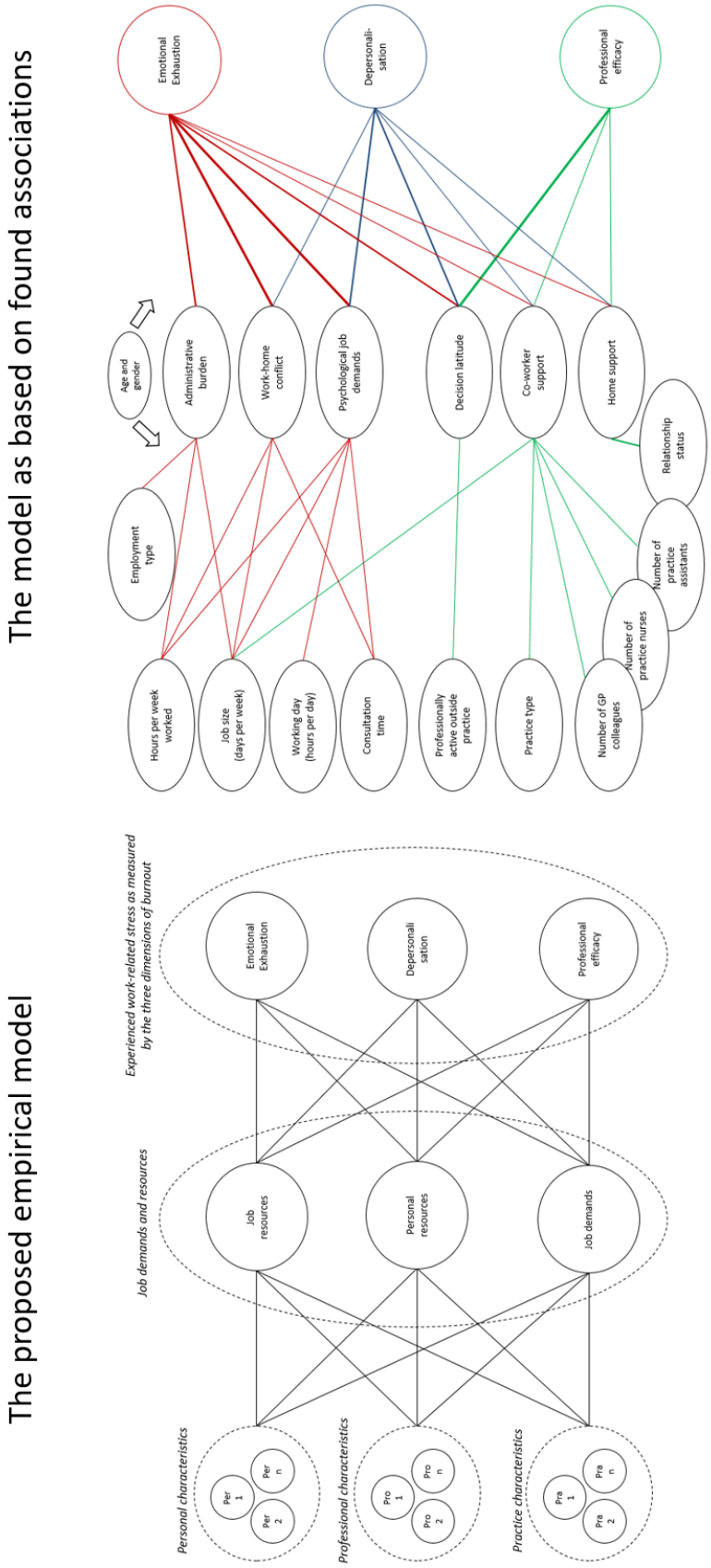

Figure 5-7: Comparison between the proposed empirical model and the model based on study data

The found associations (Figure 5-6, p. 152) can be used to identify groups at risk for professional burnout. Relevant elements are: employment type, time (hours per week, job size, working day, consultation time), being professionally active outside one's own practice and the number of colleagues (practice type, number of GP colleagues, number of practice nurses, and number of practice assistants).

A practice owner experiences a greater administrative burden than e.g. a locum GP. Employment type is of relevance for the job demands, as are all time related variables. Although some differences in associations exist, depending on the particular variable measuring time, it can be concluded that working long hours / days / weeks is associated with all three measured job demands.

Resources are associated with being professionally active outside of one's own practice, the availability of colleagues, and being is a relationship. GPs who are professionally active outside of their practice, e.g. by lecturing at a university, report higher levels of decision latitude. Having more colleagues appears to be beneficial because of higher levels of collegiate support. Finally, being is a relationship is associated with higher levels of home support.

According to the data of this study, the GP with the highest risk for professional burnout would be a full time working practice owner of a solo practice, who works long days in his or her practice, without a side job. If this GP has no partner, he or she would be worse off.

The identified risk factors (associated with demands) and potential sources of resources are summarised in Table 5-24 below.

Table 5-24: Overview of respondent characteristics that are associated with demands and resources

Respondent characteristic		**Is associated with**	**Demand / resource**
Employment type		Administrative burden	Demand
Time associated factors	Hours per week worked	Administrative burden	Demand
		Work-home conflict	Demand
		Psychological job demands	Demand
	Job size (days per week)	Administrative burden	Demand
		Work-home conflict	Demand
		Psychological job demands	Demand
		Co-worker support	Resource
	Working day (hours per day)	Psychological job demands	Demand
	Consultation time	Work-home conflict	Demand
		Psychological job demands	Demand
Being professional active outside of practice		Decision latitude	Resource
Colleagues	Practice type	Co-worker support	Resource
	Number of GP colleagues	Co-worker support	Resource
	Number of practice nurses	Co-worker support	Resource
	Number of practice assistants	Co-worker support	Resource
Being in a relationship		Home support	Resource

5.6 Summary

In this chapter, the two used measurement instrument (the Maslach Burnout Inventory (MBI) and the Job Content Questionnaire (JCQ)) were validated and the results that were presented in the previous chapter were analysed in further depth (steps 1, 2 and 3 of the inferential analysis).

Both the Reliability Analysis and the Factor Analysis provided support for the two measurement instruments that are used in this study. With regards to the MBI, it was concluded that the instrument could be used unchanged. With regards to the JCQ, it was concluded, that the two dimensions ‘skill discretion’ and ‘decision authority’ could better be combined to the dimension ‘decision latitude’ in inferential analyses.

The first part of the data analysis consisted of an investigation of the association between respondent characteristics and MBI scores. In addition to age and gender, four variables were identified that were significantly associated with MBI scores directly with sufficient explanatory power. Being professionally active outside one's own practice, job size (days per week), hours worked per week and consultation duration, were all found to be associated with the MBI dimension emotional exhaustion.

The three measured demands (administrative burden, work-home conflict and psychological job demands) and the three measured resources (decision latitude, co-worker support and home support) were all found to be associated with one or more of the three dimensions of burnout. The demands were found to be predominantly associated with emotional exhaustion while the resources were associated with all three dimensions of burnout.

When the association between respondent characteristics and demands and resources was examined, a pattern emerged. Variables appeared to be associated with either demands or with resources, but virtually never with both. All time related variables (hours worked per week, hours worked per day, job size and consultation duration) were found to be associated with demands. All variables that are related to the number of colleagues (practice type, number of GP colleagues, number of practice nurses, and number of practice assistants), were associated with co-worker support: the larger the group, the higher the reported co-worker support. Employment type was found to be associated with the demand administrative burden. Being professionally active outside one's own practice was found to be associated with the resource decision latitude. Being in a steady relationship was found to be associated with the reported home support.

In the subsequent chapter, Chapter 6, the findings reported in this and the previous chapter are compared to findings of previous studies. The findings are also used in order to formulate answers to this study's research questions.

Chapter 6 Discussion

6.1 Introduction

In this chapter, the results that were presented in the previous two chapters are analysed, discussed, and compared with results of previously published studies. The aim of this chapter is to assess to what extent the research objectives are met (cf. Section 3.2, p. 59), and to respond to the formulated research questions. Each research objective is addressed in a separate section. The structure of this chapter is as follows.

The first research objective *(To assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout)* is discussed in Section 6.2 (p. 160), interpreting the data presented in Section 4.5 (p. 100), and comparing the measurement outcomes to previously published findings.

The MBI measurements are discussed in conjunction with respondent characteristics in Section 6.3 (p. 166), in order to discuss the second research objective *(To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy).* The findings of this study that were presented in Section 5.3 (p. 119) are discussed and compared with findings in the literature.

The third research objective *(To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in demands and resources)* is discussed in Section 6.4 (p. 170). The associations between demands and resources on one hand and MBI subscale scores on the other hand, presented in Section 5.4.1 (p. 135), are discussed. The association between respondent

characteristics and the respondents' demands and resources, presented in Section 5.4.2 (p. 141), are also revisited in this section. The findings are discussed in the context of the demands and resources theories that were presented in Section 2.3.3 (p. 28) and 2.3.4 (p. 30). In this section, the findings of this study are also compared to previously published findings.

In Section 6.5 (p. 177) the findings presented in Sections 5.3 (p. 119) and 5.4 (p. 134) are revisited in order to discuss the fourth research objective *(To identify specific groups within the profession that are at risk for burnout)*. The last research objective *(To propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs)* is discussed in Section 6.6 (p. 179).

In the last two sections of this chapter before the chapter summary (Section 6.7, p. 187 and Section 6.8, p. 189), the strengths and limitations of this study are discussed.

6.2 The burnout risk for Dutch GPs

The first research objective was *to determine the extent to which GPs in the Netherlands are at risk for getting burned out*. As reported in Section 4.5 (p. 103), more than one in four respondents (27.4%) report a (very) high score on emotional exhaustion and more than one in five respondents (21.1%) report a (very) high score on depersonalisation. Only one in fifteen respondents (6.8%) report a (very) low score on professional efficacy. One in seven respondents (13.8%) would classify as burned out.

In order to further interpret these findings, two elements are considered; firstly, the reference values and the interpretation thereof are considered in greater detail (Section 6.2.1 below) and secondly, the findings are compared to previously published findings (Section 6.2.2, p. 162).

6.2.1 Reference values and interpretation

For each MBI subscale (emotional exhaustion, depersonalisation and professional efficacy) reference values are available to classify scores as (very) high, average or (very) low. Different reference values exist for different professions such as nurses, policemen, teachers and medical specialists (Schaufeli and Van Dierendonck 2000, pp. 66-79). For different professions, or even workplaces, the MBI score is interpreted differently. According to the MBI manual, for a GP, a score of 2.7 on emotional exhaustion would classify as “average”, while the same score for a nurse working in a hospital would be classified as “high”.

Considering that the reference values differ for different professions, it is no surprise that the average scores found for GPs in this study, frequently classify as “average”. One could also interpret these values as “as expected”. By definition, a representative sample would on average score a value that would classify as “average” according to the reference values, as was the case in this study. Table 4-7 (p. 102) demonstrates that the found average values for emotional exhaustion and depersonalisation are indeed “average” according to the guidelines in the manual (Schaufeli and Van Dierendonck 2000). It is, however, important to realise, that the reference values are based on studies that are predominantly carried out in the 1990s. Comparing the results of this study to the reference values could be interpreted as a historical comparison, which in itself is a useful comparison. This comparison demonstrates that the average GP scores for emotional exhaustion and depersonalisation have not changed substantially in the past two decades (the reference values in the Manual are based on studies carried out in the 1990’s). It is interesting to note, however, that GPs nowadays rate their professional efficacy higher than they did twenty years ago, although this difference could possibly be ascribed to the relatively high percentage of practice owners in this study (cf. Section 4.4, p. 98), since some questions in this subscale refer to professional achievements.

Although the average values for emotional exhaustion and depersonalisation that were found in this study are consistent with the norm scores for GPs, the distributions of emotional exhaustion and depersonalisation scores do reveal a noteworthy deviation from the norm. In the norm, the scores are normally distributed (Schaufeli and Van Dierendonck 2000). In the found distributions (cf. Table 4-9 p. 103), there are much more values that classify as (very) high, than values that classify as (very) low. In a normal distribution one would expect approximately 16% of all observations to fall above one standard deviation above the average. In the study outputs, these values are 27.4% for emotional exhaustion and 21.1% for depersonalisation. This is considerably higher than what one would expect based on a normal distribution (approximately 16%).

A last element that of consideration is the predictive value for adverse events of high MBI scores. Schaufeli and Enzman (1998) found, that unfavourable MBI scores correlate with reduced job satisfaction, reduced organisational commitment, an increased intention to leave the job as well as an increased incidence of psychosomatic diseases. Glass and McKnight (1996) found unfavourable scores to correlate with clinical depression and Pfenning and Hüsch (1994) found unfavourable MBI scores to correlate with reduced self-esteem and increased anxiety. Schaufeli and Van Dierendonck (2000, p. 13) state, that the MBI scales have a predictive value regarding actually leaving the job (not just the intent) as well as adverse physical outcomes such as increased cholesterol levels. GPs with high scores have an increased risk for the above mentioned adverse events. According to the outcomes of this study, a substantial portion of Dutch GPs, approximately one in eight practicing GPs, are exposed to these risks.

6.2.2 Study outcomes in perspective

Although Dutch GPs score considerably more favourable than their European colleagues, as can be observed in Table 6-1 below, and although the GP

burnout scores appear to have improved somewhat in the last two decades (Table 6-1 below), Dutch GPs scores are more unfavourable when the results are compared to the general working population, as will be demonstrated in this section. Emotional exhaustion especially appears to be much more prevalent: the prevalence of high scores on emotional exhaustion among Dutch GPs is more than twice as high as among the Dutch general working population (Van Zwieten et al. 2014).

Many studies (e.g. Soler et al. 2008, Orton et al. 2012) report high MBI scores for physicians as well as a high incidence of burnout. Table 6-1 below summarises a number of relevant findings in previously published studies (cf. also Section 2.4.5, p. 47 and Section 2.4.6, p. 50) alongside of the findings of this study. In order to provide a meaningful comparison, the findings of this study are not only compared to previous finding in the field of medicine. Recent findings regarding (dimensions of) burnout among the Dutch working population as a whole are included as well.

Table 6-1: Comparison between findings of this study and previously published findings regarding (dimensions of) burnout

Author	Setting	Findings	This study
Recent studies on European GP burnout			
Soler et al. (2008)	European GPs (no Dutch GPs included in study)	High EE: 41% High Dep: 35% Low PE: 32%	High EE: 27% High Dep: 21% Low PE: 7%
Orton et al. (2012)	British GPs	High EE: 46% High Dep: 42% Low PE: 34%	
Brøndt et al. (2008)	Danish GPs	25% burned out	14% burned out
Previously published studies on Dutch GP burnout			
Van Dierendonck and Sixma (1994)	Dutch GPs	Mean EE: 2.3 Mean Dep: 1.9 Mean PE: 3.8	Mean EE: 2.1 Mean Dep: 1.3 Mean PE: 4.8
Bakker et al. (2001)	Dutch GPs	Mean EE: 2.1 Mean Dep: 1.8 Mean PE: 3.8	
Twellaar et al. (2008)	Dutch GPs (data collected in 2002)	Mean EE: 2.1 Mean Dep: 1.7 Mean PE: 5.1	
Recent studies on the prevalence of burnout among the general working population			
Kant et al. (2004)	Dutch general working population	Mean EE: 1.9 Mean Dep: 1.5 Mean PE: 4.1	Mean EE: 2.1 Mean Dep: 1.3 Mean PE: 4.8
Van Zwieten et al. (2014)	Dutch general working population	High EE: 13%	High EE: 27%
EE=emotional exhaustion, Dep=depersonalisation, PE=Professional efficacy			

Based on the data presented in Table 6-1, the following observations can be made. Compared to their colleagues in other European countries (Brøndt et al. 2008, Soler et al. 2008, Orton et al. 2012), Dutch GPs have considerably more favourable scores (less emotional exhaustion, less depersonalisation and a higher professional efficacy).

Over time (1994, 2001, 2002/8, this study), the scores for Dutch GPs appear to have improved somewhat. The average score for emotional exhaustion remains almost constant, but the depersonalisation scores appear to have decreased. It should, however, be noted that in the past decades the number of female GPs has increased considerably. This is of relevance since females generally score lower on depersonalisation (Schaufeli and Van Dierendonck 2000, cf. also Section 5.3.1, p. 121), implying that an increase

in the percentage of women by definition would lead to a reduced average depersonalisation score. Although the increase of the percentage of female GPs explains part of the decrease in depersonalisation scores, the decrease of depersonalisation scores is much larger than the relatively small difference between male and female GPs (1.31 for male respondents, compared with 1.17 for female respondents).

Since 2002 (Twellaar et al. 2008) professional efficacy scores appear to have decreased somewhat, but the findings of this study are considerably more favourable than the findings in 1994 (Van Dierendonck and Sixma 1998) and 2001 (Bakker et al. 2001). Compared to the findings reported by Van Dierendonck and Sixma (1998), professional efficacy scores have improved substantially over the past two decades. Nonetheless, the risk for burnout is still substantial with considerable consequences, as will be argued in the subsequent section.

6.2.3 Assessment of the Dutch GPs' risk for professional burnout

The first objective of this study was to assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout. This study has resulted in a reliable measurement of the level of emotional exhaustion, depersonalisation and professional efficacy among Dutch GPs. This objective has been realised.

Although the burnout risk for Dutch GPs is considerably lower than in other European countries, based on the findings of this study, it is considerably higher as compared to the general working population in the Netherlands. One in seven practising GPs in the Netherlands could be classified as burned out.

When these findings are extrapolated to the profession as a whole (8,812 GPs, cf. Section 1.1, p. 1), over 1,200 currently practising GPs are burned out. Together, these 1,200 GPs provide care to over 2.25 million patients in the Netherlands. Considering that the extant literature suggests that physicians who suffer from high levels of job-related stress do not function well, and have an increased risk for providing suboptimal care and making medical errors (cf. Section 2.4.5, p. 47), this finding underlines the need to address the issue of GP burnout.

6.3 The association between GP characteristics and the three dimensions of burnout

The second objective of this study was formulated as "*To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy".* In the data of this study, several associations between respondent characteristics and MBI scores are identified. In addition to age and gender, being professionally active outside one's own practice, the number of days and hours worked per week and consultation duration are identified as variables that are directly associated with MBI scores.

In the literature, many factors are identified that are associated with the level of burnout among physicians. In addition to personal factors such as age / career stage (Dyrbye et al. 2013) and gender (McMurray et al. 2000, Linzer et al. 2002, Goehring et al. 2005, Orton et al. 2012) several practice related characteristics are identified, such as practice type (single handed or group, Orton et al. 2012) and having a walk-in open access (Vedsted et al. 2013). Also, length of the working day or week (Kirwan and Armstrong 1995, Keeton et al. 2007, Dusmesnil et al. 2009) and the work pace / number of patients seen per hour (O'Connell et al. 2009) were previously found to be of

relevance. In this section the findings of this study are compared with previously published findings.

Age and gender

In this study, direct associations between age and gender and burnout scores are confirmed. The finding of Dyrbye et al. (2013), that mid-career physicians experience the highest level of emotional exhaustion is supported by the outcomes of this study (cf. Section 5.3.1, p. 122).

Number of hours worked

The influence of the number of hours worked as previously found by Kirwan and Armstrong (1995), Keeton et al. (2007) and Dusmesnil et al. (2009) is also confirmed by the results of this study (cf. Section 5.3.2, p. 125). If fact, of the four (in addition to age and gender) found direct associations between respondent characteristics and MBI subscale scores, three were time related. More hours or days worked per week was found to be directly associated with increased scores on emotion exhaustion.

Work pace

O'Connell et al. (2009) found work pace to be positively correlated with burnout levels. The more patients a physician saw per hour (shorter consultation duration), the higher his or her burnout scores were. This study resulted in an opposite finding: consultation duration was found to be positively correlated with emotional exhaustion (cf. Section 5.3.2, p. 125). In other words, the longer the duration of the consultation, therefore the less patients a respondent saw per hour, the higher his or her reported emotional exhaustion. In this study, a high work pace was not found to be a source of high burnout scores.

Walk-in open access

The association between burnout scores and having a walk-in open access as found by Vedsted et al. (2013) could not be confirmed in this study (cf. Section 5.3.3, p. 132). No associations between having a walk-in open access and burnout scores could be established in the study data. The data also indicate that having a walk-in open access is very uncommon in the Netherlands. Nine out of ten GPs require patient to make an appointment.

Patient mix

The composition of the practice's patient population (the patient mix) has little to no influence on the GP's burnout score. Although the percentage of chronically ill patients was found to be correlated with the physician's emotional exhaustion score, this association was very small (cf. Section 5.3.3, p. 134). For other examined patient characteristics, no association was found whatsoever.

Being professionally active outside one's own practice

In addition to the previously mentioned findings, the data suggest that being professionally active outside of one's practice has a positive effect on emotional exhaustion (cf. Section 5.3.2, p. 122). GPs who have a side job such as lecturing at a university, have lower emotional exhaustion scores. The difference in emotional exhaustion scores can only partly be ascribed to reduced number of hours spent within the practice (GPs who have a side job have a slightly smaller job size). The difference in emotional exhaustion scores between GPs with and without a side job does not automatically imply that being professionally active outside one's own practice improves exhaustion scores. The association does not imply causation. The cause-effect could very well be the other way around: GPs who are exhausted could be less inclined to take on a side job. Nonetheless, GPs who are professionally active outside their own practice have more favourable scores. There are many explanations possible. A side job such as lecturing could

provide a “buffer” by stepping out of the treadmill of the daily routine. It could also be an effective method of physically distancing oneself from the source of stress (i.e. patient contact) as suggested by Pines and Aronson (1988, p. 91-92) or it could be that GPs experience validation of their expertise by students when lecturing at a university. At this point, the potential explanations are mere conjecture. This topic is therefore revisited in the next section in which the (job) demands and resources are discussed.

Relevant characteristics

Age, gender, being professionally active outside one’s own practice, the number of days and hours worked per week and consultation duration are identified as variables that are directly associated with MBI score. The objective “*To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy”* is met.

With the exception of age and gender, all variables are only associated with emotional exhaustion, when associations with a low explanatory power are filtered out. When direct associations between respondent characteristics and burnout scores are examined in the study data, depersonalisation and professional efficacy are of lesser importance. Some researchers are of the opinion that this indeed is the case. E.g. Van Zwieten et al. (2014) only measure emotional exhaustion when assessing experienced job stress / burnout risk in the working population. In this study, emotional exhaustion is the only relevant MBI subscale when direct associations are investigated. When the role of job demands and resources are included in the analyses, however, depersonalisation as well as professional efficacy become of relevance. This is discussed in the next section.

6.4 The role of demands and resources

In Sections 2.3.3 (p. 28), several theories regarding the job demands and resources were introduced, starting with the Demand-Control Model (Karasek 1979), and the Demand Control Support Model (Johnson and Hall 1988). The Job demands-Resources Model (Demerouti et al. 2001) is discussed in Section 2.3.4 (p. 30). These models are widely used in the burnout literature (cf. Table 2-3, p. 33). Based on the findings of previous studies and the generally used measurement instruments, three demands and three resources were defined and measured for this study: administrative burden, work-home conflict and psychological job demands as ‘demands’ and decision latitude, co-worker support and home support as ‘resources’.

As illustrated in Figure 6-1 (cf. also Figure 5-5, p. 146 for a larger figure that also shows the strength of the associations numerically), all of the examined demands and resources are significantly associated with one or more of the three dimensions of burnout. The three demands are all associated with emotional exhaustion and two of the three demands are also associated with depersonalisation, albeit that this association is weaker (cf. Figure 5.5, p. 146). The three resources are all associated with all three dimensions of burnout. Contrary to the association between demands and the three dimensions of burnout, when resources are investigated, the association with emotional exhaustion is in no instance the strongest. Resources have the strongest association either with depersonalisation or with professional efficacy, as illustrated by the thickness of the lines in Figure 6-1 below.

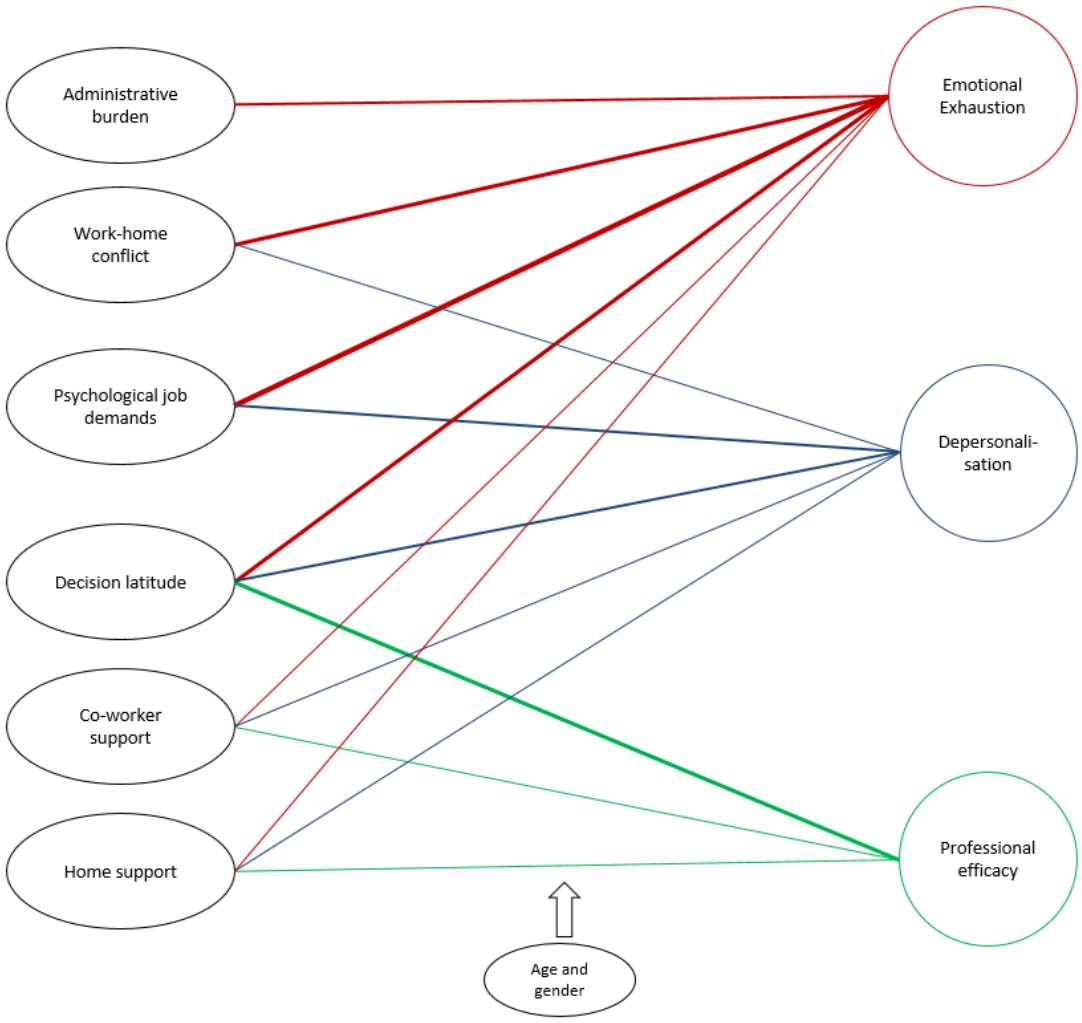

Figure 6-1: Graphical representation of the associations between demands and resources and the three dimensions of burnout[6]

The different associations between demands and resources and the three dimensions of burnout can be considered to be supportive of the hypothesis formulated by Demerouti et al. (2001), that the presence of high job demands leads to exhaustion, while a scarcity of resources leads to disengagement (cf. Figure 2-4, p. 31).

[6] The 'Age and gender' circle indicates that the depicted associations are based on analyses that are corrected for both age and gender.

Considering the relevance of all six measured demands and resources, the association between respondent characteristics the demands and resources were investigated in further detail. This analysis identified seven additional characteristics that are of relevance given their association with demands and resources as illustrated in Figure 6-2 below. The additionally identified variables are employment type, length of working day, practice type, number of GP colleagues, number of practice nurses, number of practice assistants and the GP's relationship status.

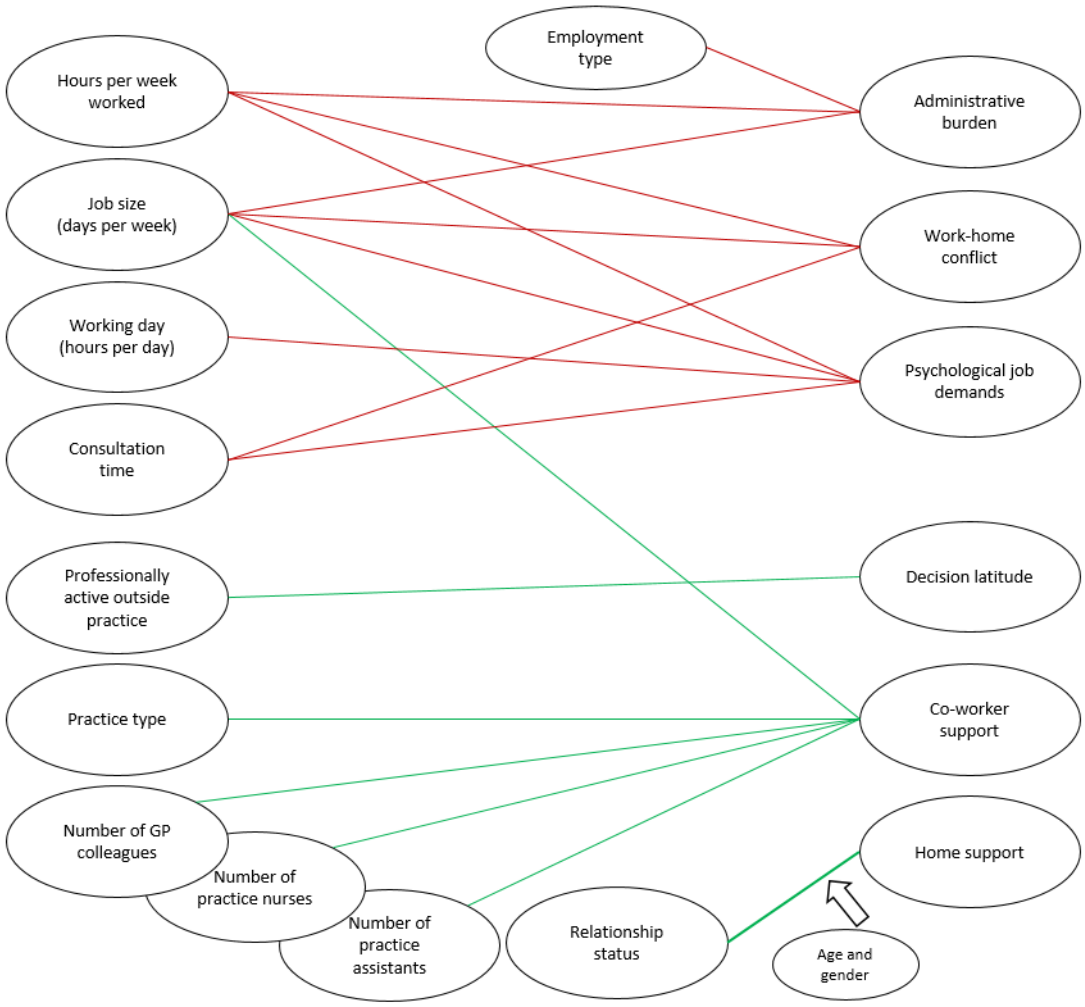

Figure 6-2: Graphical representation of the associations between respondent characteristics and demands and resources[7]

[7] The 'Age and gender' circle indicates that the depicted associations are based on analyses that are corrected for both age and gender.

For these additionally identified relevant characteristics there is no significant and direct association between these variables and one of the three dimensions of burnout, but they are associated with the GP's job demands and resources as can be seen in Figure 6-2.

Respondent characteristics that are found to be of relevance are either associated with demands or with resources. With the exception of one variable (job size), no GP characteristics are associated with both demands and resources simultaneously. Since this clear distinction is found in the data, the found association can help unravel the question as to why these characteristics are of relevance.

All time related variables (hours per week, hours per day, job size and consultation time) are associated with psychological job demands, three of the four time related variables are associated with work-home conflict and two with administrative burden. In addition, the employment type is associated with administrative burden (practice owners who are also responsible for e.g. reimbursement, HR and practice infrastructure experience a much higher administrative burden). In other words, the bigger the job, the more hours worked and the more responsible the position held, the higher the experienced job demands. This finding is consistent with previously published findings (e.g. Dusmesnil et al. 2009)

Practice type and number of colleagues (independent of the type of colleague) are associated with the resource co-worker support. The larger the group of professionals working in the practice (independent of position), the bigger the experienced co-worker support. Apparently the benefits outweigh the downsides of working in a group. This finding appears to contradict the finding by Orton et al. (2012) who found that GPs that work in a group practice report higher levels of depersonalisation than GPs who work in a single handed practice.

In the previous section, several possible explanations were offered that could provide an explanation as to why GPs who are professionally active outside their own practice reported lower levels of emotional exhaustion. GPs who e.g. lecture at a university experience a greater decision latitude (one of the three measured resources). The data suggest, that GPs who choose to be professionally active outside their own practice create, by doing so, something in which they experience a greater decision latitude. In the daily routine, the day might be more dictated by the problems of patients they are confronted with (GPs role is reactive) and they have to act within guidelines, professional standards and follow procedures as 'dictated' by healthcare insurance companies. In their side job they appear to experience a greater freedom.

The role of demands and resources has been researched extensively in the past two decades. In Table 6-2 below, the findings of this part of the study are compared with previously published findings.

Table 6-2: Comparison between findings of this study and previously published findings regarding the role of demands and resources in the context of physician work-related stress and burnout

Author	Findings	This study
Graham and Ramirez (1997)	Increased control over work associated with a reduced stress level	Decision latitude associated with more favourable scores on all three dimensions of burnout
Sundquist and Johansson (2000)	Low control and high job demands associated with high job strain	Low decision latitude associated with less favourable scores on all three dimensions of burnout. High psychological job demands associated with increased emotional exhaustion and depersonalisation
Freeborn (2001)	Control over work environment most important predictor for all three dimensions of burnout	Decision latitude associated with all three dimensions of burnout. Not the strongest association with emotional exhaustion (that is psychological job demands) but the strongest association of all demands and resources with depersonalisation and professional efficacy
LeBlanc et al. (2001)	Emotional job demands important predictor for burnout	Psychological job demands associated with emotional exhaustion and depersonalisation

Linzer et al. (2001)	Work-home interference and experienced job-stress are important mediating variables in the level of feeling burned out	Work-home conflict and psychological job demands both associated with emotional exhaustion and depersonalisation
Peeters and LeBlanc (2001)	Organisational demands and lack of collegiate support contribute to emotional exhaustion	Psychological job demands and lack of co-worker support are associated with (amongst others) emotional exhaustion
Hoff et al. (2002)	Level of support from colleagues most important predictor for burnout	Co-worker support associated with all three dimensions of burnout
Visser et al. (2003)	Stress associated with work-home interference, societal pressure, impossibility to live up to one's professional standards	Work-home conflict associated with emotional exhaustion and depersonalisation (other variables mentioned by Visser et al. not measured in this study)
Vanags and Bihari-Axelsson (2004)	The combination of a high patient load with low decision latitude most important predictor of work strain	Decision latitude associated with all three dimensions of burnout. Psychological job demands associated with emotional exhaustion and depersonalisation
Goehring et al. (2005)	Workload and patient demands among the most important predictors of burnout	Psychological job demands associated with emotional exhaustion and depersonalisation
Ozyuort et al. (2006)	Number of shifts (job demands) contributes to all three dimensions of burnout	Psychological job demands associated with emotional exhaustion and depersonalisation
Keeton et al. (2007)	Control over work schedule and work hours most important predictor for burnout	Decision latitude associated with all three dimensions of burnout
Lee et al. (2008)	Feeling of being unsupported, especially in combination with the feeling of having to abide by rules and regulations (low control) important source of burnout	Co-worker support and decision latitude both associated with all three dimensions of burnout
Dusmesnil et al. (2009)	Dealing with long working hours on a weekly basis, high levels of mental strain, managing palliative care, unrealistic patients' expectations, work-home conflicts, having one's abilities questioned by patients, confronting judicial situations and legal cases or living with a partner, all associated with one or several dimensions of burnout	Long working hours associated with emotional exhaustion, psychological job demands associated with emotional exhaustion and depersonalisation, being in a steady relationship associated with increased home support. Other variables not measured in this study, but many are mentioned by respondents as being important sources of job stress and burnout.
Leiter et al. (2009)	Workload important predictor for emotional exhaustion an cynicism	Workload as such not measured, but psychological job demands associated with emotional exhaustion and depersonalisation (=cynicism)
Shackelton et al. (2010)	Clear association between work stress and experienced lack of professional autonomy	Decision latitude associated with all three dimensions of burnout
Orton et al. (2012)	Group practice higher depersonalisation than single handed practice	No direct association found between practice type and depersonalisation, but an association between practice type and co-worker support (which in turn is associated with depersonalisation) was found.

Many of the findings regarding the role of demands and resources that were published in the past two decades, find support in the findings of this study as demonstrated in Table 6-2. This study provides additional support for the important role of demands and resources in the development of burnout.

The third research objective of this study '*To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in demands and resources'* is met. As shown in this study, demands and resources are found to play an important role. Not only can several of the found associations between GP characteristics and MBI scores be explained by presence or absence of demands and resources, the demands and resources help identify more elements that are of relevance in the development of burnout in GPs.

The identification of additional relevant GP characteristics necessitates revisiting the second research objective '*To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy'.* In the previous section age, gender, being professionally active outside one's own practice, the number of days and hours worked per week and consultation duration were identified as variables that are directly associated with MBI scores. After examination of the demands and resources additional indirect associations can be identified. Employment type, practice type, number of colleagues and the GP's relationship status are additional characteristics that were found to be of relevance (cf. Table 5-24, p. 156). The identification of relevant characteristics helps to identify specific groups of GPs who are at risk for developing burnout as will be discussed in Section 6.5 below. It also provides potential points of engagement for recommendations for practice as will be discussed in Section 6.6 (p. 179).

6.5 Specific groups at risk

The fourth research objective was formulated as '*To identify specific groups within the profession that are at risk for burnout'.* Combining the findings presented in Sections 5.3 (p. 119) and 5.4 (p. 134), that were discussed in the previous two sections, specific groups at risk can be identified. The findings used to identify specific groups at risk are summarised in Table 6-3 below.

Table 6-3: An overview of respondent characteristics that are either directly associated with MBI scores or associated with demands or resources

Respondent characteristic		**Is associated with**
Employment type		Administrative burden
Time associated factors	Hours per week worked	Emotional exhaustion
		Administrative burden
		Work-home conflict
		Psychological job demands
	Job size (days per week)	Emotional exhaustion
		Administrative burden
		Work-home conflict
		Psychological job demands
		Co-worker support
	Working day (hours per day)	Psychological job demands
	Consultation time	Emotional exhaustion
		Work-home conflict
		Psychological job demands
Being professional active outside of practice		Emotional exhaustion
		Decision latitude
Colleagues	Practice type	Co-worker support
	Number of GP colleagues	Co-worker support
	Number of practice nurses	Co-worker support
	Number of practice assistants	Co-worker support
Being in a relationship		Home support

The found associations can be used to identify groups at risk for professional burnout. Relevant elements are: employment type, time (hours per week, job size, working day, consultation time), being professionally active outside one's own practice and colleagues (practice type, number of GP colleagues,

number of practice nurses and the number of practice assistants) and the GP's relationship status.

According to the data of this study, the GP with the highest risk for professional burnout would be a full time working practice owner of a solo practice, who works long days in his or her practice, without a side job. If this GP has no partner, he or she would be worse off because of the reduced home support which is associated with all three dimensions of burnout.

The findings indicate that a practice owner experiences a greater administrative burden than a locum GP and that employment type is of relevance for the job demands. All time related variables were found to be of relevance for the job demands. Although some differences in associations exist, depending on the particular variable measuring time, it can be concluded that working long hours / days / weeks is associated with all three measured job demands.

Resources were found to be associated with having a side job and the availability of colleagues to provide co-worker support. Having more colleagues appears to be beneficial. Aside from this, it would be inappropriate and unfounded to conclude that taking on a side job would be a remedy or preventive measure against burnout. This study has merely established an association, which on itself does not imply causation. It has been established, however, that GPs who are active outside of one's practice report higher levels of decision latitude, which in turn is associated beneficially with all three dimensions of burnout.

Finally, being is a relationship is associated with higher levels of home support, which is of relevance, since home support is associated with all three dimension of burnout. According to the demand-resource theories, high demands can be 'compensated' by high resources. In individual cases, the

presence or absence of home support might just be the tipping point between just being able to cope with high demands and no longer being able to cope with the job demands.

6.6 Recommendations for practice

The fifth research objective was formulated as '*To propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs'*. The empirical findings of this study are used to propose three recommendations to combat GP burnout.

1) The findings of this study indicate that a high number of hours worked per week is directly associated with increased emotional exhaustion (cf. Section 5.3.2, p. 124). In addition, the amount of hours worked per week is found to positively correlate with all three measured demands (cf. Section 5.4.2, p. 145). It is therefore recommended to reduce the length of the GP's working week. This can be achieved by decreasing the GP's workload, specifically by decreasing the norm for the number of patients per FTE GP, the standard practice size, as discussed in further detail in Section 6.6.1 below.

2) A high experienced administrative burden was found to correlate positively with high emotional exhaustion (cf. Section 5.4, p. 137). Nine out of ten respondents indicated that their job required them to carry out too many administrative duties (cf. Section 4.6, p. 108). It is therefore recommended to undertake a comprehensive analysis of the quantity, type and purpose of administrative duties currently performed by GPs and to trim unnecessary paperwork and bureaucracy drastically. This recommendation is discussed in further detail in Section 6.6.2 (p. 183).

3) The findings of this study show that high levels of co-worker support are associated with decreased emotional exhaustion, decreased depersonalisation and increased professional efficacy (cf. Section 5.4.1, p. 136). It is therefore recommended to increase co-worker

support, either within the GP practice by investing in support staff or by using the existing collegiate support infrastructure. This recommendation is discussed in greater detail in Section 6.6.3 (p. 184).

6.6.1 Recommendation 1: Decrease standard practice size in order to reduce the length of the working week

Empirical findings

In Section 5.3.2 (p. 124), it was reported that most variables that were directly associated with burnout scores, particularly emotional exhaustion, were time related. The amount of hours worked is associated with all three measured job demands (cf. Section 5.4.2, p.145). It would therefore make sense to explore options to reduce the length of the working week. In Section 4.3.4 (p. 96), it was reported that GPs on average work 49 hours per week. It should be noted, that on average the working week is not extreme, because many GPs do not work fulltime. The average working day, however, is 12 to 13 hours. GPs in fulltime employment work 62 hours per week on average.

Potential points of engagement

a) Standard practice size

   The Dutch Healthcare Authority annually determines a norm for the number of patients a GP is supposed to have registered in a fulltime practice and the annual fee per patient, as well as the fee per consultation and the fees for medical procedures. The reimbursement of a GP is (amongst others) based on the number of registered patients (fixed fee per registered patient per year), and the number of consultations and surgical procedures. Patients do not pay for general practice care. The health care insurance companies pay directly to the GP's practice. A manner to reduce the length of the working week is to reduce the GP's workload, i.e. the number of patients per FTE GP as will be explored in this section.

b) Reorganising evening, night and weekend shifts

An alternative approach to reduce the length of the working week, would be a reconsideration of the organisation of evening, night- and weekend shifts. The effects of working evening and night shifts, however, were not part of this study. Since there are no empirical findings regarding working evening, night or weekend shifts to substantiate recommendations, no recommendations regarding this aspect of GP work are formulated.

Other considerations

A recently published international comparison (Schäfer et al. 2016) revealed, that the number of patients per FTE GP in the Netherlands is the highest in Europe. A Dutch fulltime GP has 2,315 registered patients on average. According to Schäfer et al. (2016), this number is much lower in other countries (e.g. UK: 1,524, Italy: 1,388, Denmark: 1,651). In the past two decades, most countries have reduced the norm for the number of registered patients. In the UK, the average number of registered patients was 2,300 per fulltime GP in 1993 (comparable to the current number of patients in the Netherlands). In the past two decades, this number has dropped by a third in the UK, while the number of patients has remained virtually unchanged in the Netherlands (1993: 2,343, 2012: 2,315) (Schäfer et al. 2016).

The empirical findings of this study as well as the international comparison made by Schäfer (2016) provide support for the recommendation to reduce the number of patients per GP. It should be noted though, that a reduction of the number of patients should not be used to spend more time with a patient during surgery (see less patients per hour). The empirical findings do not support this strategy, since a decreased work pace is not associated with an improvement of burnout scores (cf. Section 5.3.2, p. 125). In other words, it could be beneficial to reduce the number of patients per fulltime GP as long as this reduction in workload is used to reduce the number of hours worked,

and not to reduce the work pace while maintaining the same length of the working week.

A reduction of the number of patients per GP implies an increase of the number of GPs, making this a long term and potentially costly solution to the GP burnout problem. It is worth serious consideration though. Even without considering the association between the length of the working week and emotional exhaustion, it is hard to imagine, that anyone can sustain a 60-plus hours working week throughout his or her entire career. The fact that a 49 hours working week is considered to be part-time, could on itself be argued to be an indicator of a GP shortage in the Netherlands.

The recommendation

Based on the aforementioned empirical findings of this study and the additional considerations, the following recommendation is formulated:

Critically evaluate the norm for the standard practice size and consider an increase in the GP workforce. A reduction in number of patients should be used to shorten the working week, not to reduce the work pace during surgery hours. The professional association LHV should engage in a dialogue with the Dutch Healthcare Authority and other stakeholders such as the government and the insurance companies to come to a reduction of the number of registered patients per FTE GP. In order to allow for a reduction to be able, an increase in the workforce is needed. This implies that the professional association LHV should at the same time engage in dialogue with the parties involved in workforce capacity planning. The General Practice Department (Kamer Huisartsen) of the Capacity Institution (Capaciteitsorgaan), in which both the LHV and the healthcare insurance companies are represented, should put the necessity of a workforce increase on the agenda.

An increase in workforce would not only reduce the risk for burnout for GPs, but it would also bring the workload of Dutch GPs more in line with other European countries.

6.6.2 Recommendation 2: Trim unnecessary paperwork and bureaucracy

Empirical findings and considerations

Administrative burden is significantly and substantially associated with the respondents' score on emotional exhaustion. (cf. Section 5.4, p. 137). In addition, nine out of ten respondents indicated that their job required them to carry out too many administrative duties (cf. Section 4.6, p. 108).These empirical findings suggests that the amount of paperwork is a source of GP burnout. An effort to reduce the amount of paperwork might be an effective measure to prevent or reduce GP burnout. Not only because of the direct effect this might have on the GP's level of emotional exhaustion, but also because this could impact several other relevant parameters as discussed below.

If a GP has to spend substantially less time filling in forms, this could – provided that the reduction is big enough – reduce the GPs working day / week, which would also be beneficial for the GP's emotional exhaustion level, as discussed in the previous section. If the GP would be able to spend evenings or weekends with his or her family, instead of working on the practice administration, this could in addition reduce the frequency of work-home conflicts, which could have a beneficial effect on emotional exhaustion as well as on depersonalisation (cf. Section 5.4.1, p. 137).

Furthermore, an administrative burden is associated with the experienced psychological job demands. A reduction in psychological job demands would be beneficial for both emotional exhaustion and depersonalisation (cf.

Section 5.4.1, p. 136). In other words, an effort to reduce the GP's administrative burden potentially has many beneficial effects. If a reduction in his or her administrative burden was that substantial, that the GP could reduce his or her working week by several hours, this could even reduce the need to decrease the number of patients per fulltime GP. In theory, reducing the administrative burden could kill two birds with one stone.

The recommendation

Based on the empirical findings of this study that were discusses above, the following recommendation is formulated:

Undertake a comprehensive analysis of the quantity, type and purpose of administrative duties currently performed by GPs and trim unnecessary paperwork and bureaucracy drastically. In Chapter 1 (p. 3), the existence of an initiative to trim back unnecessary paperwork that became operational in October 2015 was mentioned (InEen et al. 2016). This initiative should be given full support by all parties involved.

6.6.3 Recommendation 3: Increase co-worker support, either within the GP practice or by using the existing collegiate support infrastructure

Empirical findings and considerations

The findings of this study indicate that working in larger groups is beneficial (cf. Section 5.4.2, p. 145). It would therefore intuitively make sense to stimulate working in a group practice, instead of a solo practice. Such stimulus, however, is not required, since the solo practice is already disappearing as a practice type and only 3% of young GPs prefer working in a solo practice; The vast majority of young GPs prefer working in a group practice (Jabaaij and Hingstman, 2007).

The data of this study show, that collegiate support does not need to come from GPs. The association between number of GP colleagues and co-worker support is as strong as the association between number of practice nurses or practice assistants and co-worker support (cf. Section 5.4.2., p. 145). The empirical findings of this study are in support of an increase of support staff, since this leads to an increase in co-worker support, which has beneficial effects on all three dimensions of burnout. At the same time, working in larger groups does not lead to decreased autonomy or increased administrative burden (cf. Section 5.5, e.g. Figure 5-6, p.152). The advantages of working in groups clearly outweigh possible disadvantages.

In addition to organising collegiate support within a practice, support could be organised between practices. In the Netherlands, many initiatives exist, in which colleagues exchange their views on a topic and provide learning and support to one another. These initiatives go by many names such as intervision[8] groups, Balint groups, quality circles, peer support groups and peer supervision. They all have their own particulars, but what they all have in common is that problems or events are discussed in a safe and collegiate environment with or without the presence of an external moderator. This kind of support groups is quite popular amongst GPs, as evidenced by e.g. the existence of over 60 formal Balint groups (Balint Nederland 2016). It is, however, not common to address work-stress or burnout in these groups, furthermore, the agenda is often case or event driven. The brochure made by the Netherlands Society of General Practitioners (NHG) to support collegiate intervision mentions only medical topics as examples (HNG 2016). Considering the taboo surrounding the topic burnout (Movir 2012), it is not likely that this topic will be put on the agenda without active support or promotion by professional or scientific associations.

[8] The term “intervision” (as opposed to supervision) is a term that is used in the Netherlands for a method of learning from one another within a group of colleagues regarding everyday work issues

As mentioned in Section 2.4.5 (p. 50), there is limited research on the effectiveness of measures to prevent or to reduce work-related stress and burnout. In recently published studies, some evidence begins to emerge for the effectiveness of certain interventions such as the effectiveness of mindfulness training for physicians (Hassink-Franke 2016), but the effectiveness of intervision or collegiate supervision as a (preventive) measure has so far not been studied. Further research on effective preventive measures or interventions is required as will also be discussed in Section 7.5 (p. 202).

It is a fair assumption that discussing work-stress of burnout in collegiate groups increases the individual GP's feelings of collegiate support. Considering the beneficial effects of increased collegiate support on all three dimensions of burnout (cf. Section 5.5, p. e.g. Figure 5-6, p.152), it is recommended to promote putting the topics work-related stress or burnout on the agenda of collegiate support groups, while evaluating the effectiveness thereof.

The recommendations

Based on the aforementioned empirical findings of this study and the additional considerations, the following recommendation is formulated:

Increase co-worker support wither within the practice or by using the existing collegiate support infrastructure. An increase of co-worker support could be achieved by investing in additional support staff. Not only does this alleviate the workload of the physician directly because of delegation of tasks to others, but it increases co-worker support, without considerable disadvantages. In addition, the use of the existing peer support infrastructure to discuss work-related stress and burnout should be stimulated. The professional association LHV should consider actively promoting the use of the so-called 'intervision groups' or 'Balint groups' for peer support and learning on work-stress and burnout. The Netherlands Society of General

Practitioners NHG should adjust the existing brochures on 'intervision' that currently solely focus on medical issues. The active promotion of using the existing collegiate support infrastructure for preventing or addressing work-stress and burnout should coincide with an evaluation of the effects of this use of support groups.

6.7 Critical evaluation of research methodology

6.7.1 Research design

Quantitative design

This study was, like the vast majority of studies in this field, designed as a quantitative study. The benefit of such a design is that is provides objective empirical findings. The use of a generally accepted and standardised measurement instrument contributes to the possibility to compare findings to previously published studies. At the same time, a quantitative approach limits the understanding of why GP burnout actually occurs.

This study has resulted in many empirical findings such as associations between GP characteristics and burnout scores. The inclusion of demands and resources in the study design contributed to the understanding of the phenomenon burnout. Not only did this study establish an association between e.g. having a side job and improved burnout scores, but it was able to establish that this association can possibly be explained by an increase in experienced decision latitude. At the same time, the found associations do not answer the question why these associations exist. Combining the empirical findings with the theories presented in the literature has in several instances lead to credible potential explanations, but these explanations remain to be hypotheses. For a better understanding of how and why burnout develops, a more qualitative approach would have to be adopted.

Cross-sectional design

This study was set up with a cross-sectional design. This is a widely used study design in the field of burnout research. This type of design, however, has obvious limitations. A longitudinal design could measure e.g. the effect of a reduction of the length of the working week. Do burnout scores improve if a GP decided to reduce the length of his or her working week? This is plausible given the strong association between the length of the working week and emotional exhaustion, but only a longitudinal study could answer this type of question with more certainty. In a cross-sectional study such as this one, causality can only be hypothesised on the basis of found associations. In order to verify whether the hypothesised causality actually exists, a longitudinal study design, arguably even an experimental design, would be called for.

6.7.2 Biases

In Section 3.6.7 (p. 89) several sources of potential bias were identified. In this section it was argued, that an overrepresentation of older GPs could be expected. A comparison between the composition of the group of respondents and the profession as a whole indeed showed, that the group of respondents was slightly older than the profession as whole. This difference, however, was very small. There is no particular age category that is substantially over- or underrepresented (cf. Section 4.4, p. 97).

There is, however, a substantial overrepresentation of practice owners among the respondents. While in the profession as a whole 78% of all GPs work as practice owners, among the respondents of this study, this percentage was 96%. Considering that employment type is associated with the experienced administrative burden (cf. Section 5.4.2, p. 141), and considering that administrative burden is associated with emotional exhaustion, the actual average score on emotional exhaustion in the profession might be somewhat lower than measured in this study.

6.7.3 Use of secondary databases

In addition to the survey data, this study made use of secondary data. The socio-economic data were obtained from The Netherlands Institute for Social Research and patient related data were obtained from the Supply and Demand Analysis Monitor First Line Healthcare (cf. Section 3.6.4, p. 75). The patient data in this database is partly based on actual measurements, partly on extrapolation: in combination with actual measurements, socioeconomic, demographic and epidemiologic variables are used in estimating e.g. the prevalence of diseases per ZIP-code. At best, the database provides an approximation of the prevalence of e.g. chronic diseases. In this study some correlations were identified between patient characteristics and GP burnout scores, albeit that these associations were weak. The found associations are indicative at best. In order to establish to what extent indeed an association between patient characteristics and burnout scores exists, the use of actual patient data would be preferable.

6.8 Limitations of this study

In the previous section, the research methodology, the research methods and potential biases were discussed. The choices that were made, as well as the biases that were identified, imply certain limitations, as will be discussed below.

Geographic limitation

Only Dutch GPs participated in this study. The results of this study are therefore only directly applicable in the Netherlands. In fact, a comparison between the findings of this study and previously published studies in other countries (cf. Table 6-1, p. 164) shows that GP burnout is much more common in other European countries than in the Netherlands. This would indicate, that the healthcare context in which a GP practices is of relevance.

The findings regarding the role of job demands and resources appear to be more generally applicable. Table 6-2 (p. 174) demonstrates, that the findings of this study are congruent with previously published findings in both Europe as well as the United States.

Limitations in profession and employment type

This study focused on Dutch GPs as the respondent cohort only. Although the term 'physician burnout' is frequently used in this thesis as well as in the academic literature (e.g. Linzer et al. 2001, Linzer et al. 2002, Halbesleben and Rathert 2008, O'Connell et al. 2009), the results of this study are not generally applicable for physicians, but to GPs only. The hospital setting differs significantly from the setting in first line general practice. Although several found associations between respondent characteristics and demands/resources or burnout scores might be applicable for physicians working in a hospital setting as well, the findings of this study are limited to GPs.

In Section 6.7.2 (p. 188) it was noted that 96% of all respondents were practice owners, while within the profession in the Netherlands only 78% of GPs are practice owners. This bias implies that the findings of this study for non-practice owning GPs should be interpreted with due caution. The overrepresentation of practice owning GPs could imply that the validity of the conclusions drawn in this thesis are applicable for practice owners only.

No causal effects

This study was designed as a cross sectional and non-experimental study. The choice of study design has implications for the way the findings can be interpreted. The findings of this study include many associations between respondent characteristics, demands/resources and burnout scores. Given the research design of this study, cause-effect relationships have not been established. The found associations are associations only. For example, this

study found that GPs who are professionally active outside their own practice (e.g. as university lecturer) score lower on emotional exhaustion. It would go too far to conclude that GPs who score high on emotional exhaustion should seek a side-job as a remedy. Only a longitudinal study could measure the effects of *taking on* a side job. This study only established an association between emotional exhaustion and *having* a side job.

6.9 Summary

In this chapter, the findings presented in Chapters 4 (p. 92) and 5 (p. 110) were discussed and compared with previous findings. The five formulated research objectives were addressed and answers to all research questions were formulated. The empirical findings were used to come up with potential recommendations to combat the problem of GP burnout. The chapter concluded with a discussion of the strengths and limitations of the study. The main findings and conclusions of this study, its contribution to theory and the recommendations for practice are revisited in the subsequent chapter.

Chapter 7 Conclusions

7.1 Overview of research objectives

The research question for this study was formulated as:

> *"To what extent are Dutch general practitioners at risk for burnout as measured by its three dimensions (emotional exhaustion, depersonalisation and reduced professional efficacy) and to what extent can variation in the three dimensions of burnout be explained by differences in personal, professional and practice characteristics? To what extent can variation in the three dimensions of burnout be explained by job demands and resources?"*

To investigate this, five specific research objectives were formulated.

1. *To assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout.*
2. *To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy.*
3. *To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in demands and resources.*
4. *To identify specific groups within the profession that are at risk for burnout*.
5. *To propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs.*

The main findings for the first four research objectives are presented in the next section. The recommendations for practice were previously discussed in Section 6.6 (p. 179) and are summarised in Section 7.4.2 (p. 201).

7.2 Overview of findings

In the previous section the five research objectives that were formulated for this study were stated. All five research objectives were met. The outcomes of this study are summarised for each objective below.

1. *To assess the level of emotional exhaustion, depersonalisation and (reduced) professional efficacy in Dutch GPs in order to ascertain the extent to which the professionals are at risk for burnout.*

More than one in four respondents reported a (very) high score on emotional exhaustion and more than one in five respondents depicted a (very) high score on depersonalisation. One in seven respondents would classify as burned out. Dutch GPs score considerably more favourable than their European colleagues, and the GP burnout scores appear to have improved somewhat in the last two decades. Still, the prevalence of high scores on emotional exhaustion among Dutch GPs is more than twice as high as among the Dutch general working population.

2. *To determine to what extent personal, professional and practice characteristics are associated with the level of experienced emotional exhaustion, depersonalisation and (reduced) professional efficacy*

The outputs of this study show that age is associated with both emotional exhaustion and depersonalisation, especially GPs in the age category 41-45 years have unfavourable scores. Male GPs score higher levels of depersonalisation than female GPs, which is consistent with previously published findings.

The most important determinant of emotional exhaustion is the amount of hours worked per day or week. GPs that are professionally active outside of their own practice have more favourable scores. This difference can only partly be ascribed to a somewhat smaller amount of hours worked in the

practice. GPs with an alternative job as a source of employment report higher levels of decision latitude.

Contrary to previously published studies, this study did not find a positive correlation between a high work pace and emotional exhaustion. This study resulted in an opposite finding: the more patients a GP scheduled per hour during practice surgery time, the lower his or her score on emotional exhaustion.

The practice environment and the composition of a practice's patient population appears to be of some, albeit limited, relevance. A few significant associations between patient characteristics and burnout scores were identified, such as the association between the percentage of patient with chronic diseases and the GP's emotional exhaustion. These associations, however, were very small.

3. *To determine to what extent variation in emotional exhaustion, depersonalisation and (reduced) professional efficacy can be explained by variation in demands and resources*

In this study three job demands and three resources were measured. The measured job demands were: administrative burden, work-home conflict and psychological job demands. The measured resources were: decision latitude, co-worker support and home support. All measured job demands were found to be associated with emotional exhaustion and two of the three (work-home conflict and psychological job demands) were also found to be associated with depersonalisation, albeit that this association was weaker. All measured resources were found to be associated with all three dimensions of burnout. Resources were found to have a stronger association with depersonalisation and professional efficacy than with emotional exhaustion. An increase in the administrative burden leads to an increase in emotional exhaustion. An increase in work-home conflict or psychological job demands leads to an

increase in both emotional exhaustion and depersonalisation. An increase in decision latitude, co-worker support or home support leads to a decrease in emotional exhaustion and depersonalisation and an increase in professional efficacy (cf. Figure 5-5, p. 146).

Respondent characteristics were found to be associated with either demands or with resources, rarely with both simultaneously. All time related variables (hours per week, hours per day, job size and consultation duration) are associated with psychological job demands. The amount of hours and days per week worked and the consultation duration were found to be associated with work-home conflict. The amount of hours or days per week worked was also found to be associated with the reported administrative burden. In addition, employment type was associated with administrative burden: practice owners reported the highest levels of administrative burden (cf. Figure 5-7, p. 154). The results show, that the bigger the job, the more hours worked and the more responsible the position held, the higher the experienced job demands. Considering the positive association between job demands and emotional exhaustion (and to a lesser extent depersonalisation), these factors could all be identified as risk factors for developing a burnout.

The findings indicate, that practice type and the number of colleagues are associated with the resource co-worker support. It can therefore be seen that the larger the group of professionals working in the practice (independent of position), the higher the experienced co-worker support. GPs who are professionally active outside of their practice (e.g. as a university lecturer) report higher levels of decision latitude. Considering that an increase in resources is associated with more favourable burnout scores (less emotional exhaustion, less depersonalisation and higher levels of professional efficacy), working in a larger group and being professionally active outside of one's own practice could be identified as 'buffers' against developing a burnout.

4. *To identify specific groups within the profession that are at risk for burnout*.

According to the data of this study, the GP with the highest risk for professional burnout is a full time working practice owner of a solo practice, who works long days in his or her practice, without a side job. Not being in a steady relationship also adds to the risk of becoming burned out.

5. *To propose recommendations in order to develop policies or preventive measures to reduce the risk for burnout amongst Dutch GPs.*

Based on the results of this study several recommendations for practice are formulated. These recommendations were discussed in Section 6.6 (p. 179) and are summarised in Section 7.4.2 (p. 201).

7.3 Conclusions of this study

Based on the findings of this study the following headline conclusions can be drawn.

- One in seven practising Dutch GPs could be classified as burned out.
- Dutch GPs' burnout scores have improved somewhat in the last two decades, however, the prevalence of high scores on emotional exhaustion among Dutch GPs is more than twice as high as among the Dutch general working population.
- The amount of hours worked per week is the most important determinant of emotional exhaustion. Other relevant factors are age, gender and being professionally active outside of one's own practice.
- The practice environment as well as the composition of the patient population appear to be of some relevance, but its influence is small.

- Variation in emotional exhaustion, depersonalisation and professional efficacy can to a large extent be explained by variation in demands and resources. Job demands are predominantly associated with emotional exhaustion, while a scarcity of resources predominantly leads to increased depersonalisation and reduced professional efficacy.
- All time-related characteristics such as hours worked per week or day are associated with psychological job demands.
- The bigger the job, the more hours worked and the more responsible the position held, the higher the experienced job demands.
- Working in a group setting is beneficial. The larger the group, the bigger the co-worker support.
- Being professionally active outside one's own practice is beneficial. GPs who are professionally active outside of their own practice report lower levels of emotional exhaustion, even after correcting for the somewhat smaller amount of hours worked in the GP practice. GPs who are professionally active outside one's own practice report higher levels of decisions latitude (one of the measured resources).
- A full time working GP who owns a solo practice and who works long days in his or her practice without a side-job has the biggest risk of becoming or being burned out.

7.4 Contributions to knowledge and practice

7.4.1 Contribution to knowledge

The contribution to knowledge of this study is fivefold as will be discussed below.

1) Combining theoretical frameworks

As described in Chapter 2, many studies are published on the association between personal, professional and practice characteristics on one hand and burnout scores on the other. Examples thereof are Kirwan and Armstrong (1995), McMurray et al. (2000), Linzer et al. (2002), O'Connell et al. (2009), Dyrbye et al. (2013) and Vedsted et al. (2013). Also, many studies are published on the influence of demands and resources on burnout scores, such as Peeters and LeBlanc (2001), Hoff et al. (2002), Keeton et al. (2007), Lee et al. (2008) and Shackelton et al. (2010). There are, however, very few studies that combine the two. Although some studies look at both GP characteristics and demands and resources, such as the studies published by Goehring et al. (2005) and Keeton et al. (2007), these studies do not explicitly combine the two theoretical frameworks. In this study existing theoretical frameworks were combined. Particularly, the theoretical frameworks as used in the Physician Worklife Study (Williams et al. 2002) and the MEMO study (Linzer et al 2005) were combined with the Job-demands and Resources model as proposed by Demerouti et al. (2001).

In this study the association between personal, professional and practice characteristics on one hand and burnout scores on the other was examined and the job demands and resources were used to try to come up with an explanation for the found associations by means of an analysis of the influence of job demands and resources. This is a relatively novel approach.

2) Support for Demerouti et al.'s hypothesis on the different role of demands and resources

During the development of the different demands and resources theories, several hypotheses were offered on how the two, if at all, interact. In the Demand-Control model (Karasek 1979), decision latitude was proposed to be a coping strategy to deal with high demands. Johnson and Hall (1988) added social support as a buffer for high job demands in their Demand Control

Support Model. A little over a decade later, Demerouti et al. (2001) hypothesised that the presence of high job demands leads to exhaustion, while a scarcity of resources leads to disengagement (depersonalisation). In other words, the role of demands is distinct from the role of resources, instead of the presence of demands and resources being a matter of balance. This study provides clear support for Demerouti's hypothesis.

3) Insight in (the absence of) changes in Dutch GP burnout in the past decade

Burnout scores amongst Dutch GPs have been measured before in the 1990s (Van Dierendonck et al. 1992, 1994) and the early 2000s (Twellaar et al. 2008, Houkes et al. 2008) using the same measurement instrument (Maslach Burnout Inventory) as used in this study. This study has shown that despite the major changes in general practice in the past decades (cf. Chapter 1), the level of emotional exhaustion have remained almost constant. Depersonalisation scores, however, appear to have improved somewhat.

4) Identification of risk factors for GP burnout

An analysis of the association between respondent characteristics and burnout scores revealed that (in addition to age and gender) four variables were directly associated with emotional exhaustion. These four variables could be identified as the most important risk factors for GP burnout. Ranked by the strength of the found associations (from high to low) these four risk factors are: longer consultation duration, working more hours per week, working more days per week and not being professionally active outside of one's own practice.

Most found associations in this study correspond with previous findings. Gender differences were previously reported by e.g. McMurray et al. 2000, Linzer et al. 2000, Goehring et al. 2005 and Orton et al. 2012). Age

differences, especially the reported mid-career peek in burnout levels, were previously reported by Dyrbye (2013). The association between long working days / weeks was previously found by Kirwan and Armstrong (1995), Keeton et al. (2007) and Dusmesnil et al. (2009).

The only finding of this study that contradicts previous findings, was the association between the time allotted to see patients and burnout scores. While this study found that a longer consultation duration (i.e. seeing less patients per hour) was positively associated with increased psychological job demands and increased work-home conflict (both associated with adverse burnout scores), O'Connel et al. (2009) found that a high work pace (i.e. seeing more patients per hour) was positively correlated with burnout scores. It should be noted though, that O'Connel studied burnout amongst American gynaecologists, which is a considerably different setting than this study.

When the association between respondent characteristics and demands and resources are analysed, additional risk factors can be identified. These are: working as a practice owner, working long days, working in a solo practice, having a limited number of colleagues (independent of their function) and not being in a relationship. While Orton et al. (2012) found that GPs working in a group practice (compared to single handed practice) was associated with increased depersonalisation scores, this study resulted in a different finding. No difference in depersonalisation scores were found. In this study, working in a group practice (compared to working in a single handed practice) is associated with increased experienced co-worker support, which in turn is associated with lower depersonalisation and higher professional efficacy scores. The larger the number of colleagues, independent of position, the higher the reported co-worker support.

5) Evaluating the influence of environmental and patient related characteristics

To date, little is published on the influence of the practice environment. The study published by Goehring et al (2005) is one of the few exceptions. Goehring et al. (2005) found, that working in a rural area was associated with increased burnout scores. The role of the practice catchment composition has to date not been studied. Nowadays, an information infrastructure exists that was not in existence during the time of the previous studies in the Netherlands. Using the practice's ZIP-code, results can be linked to a myriad of socioeconomic, demographic and even medical information. This study has pioneered in using this data in burnout research. Although the findings are indicative and the found associations are weak, several significant associations between the practice environment / patient population and burnout scores / demands and resources were found. This is a novel approach in physician burnout research. The found associations justify further research.

7.4.2 Contribution to practice

The findings of this study call for change. Although the average scores on all three dimensions of burnout are comparable to the Dutch working population as a whole, the prevalence of high scores on emotional exhaustion among Dutch GP is more than twice as high as among the Dutch general working population (cf. Table 6-1, p. 164). One in seven practising GPs in the Netherlands could be classified as burned out, with fulltime working GPs reporting a working week of 62 hours on average.

As discussed in Section 7.4.1 (p. 197), this study has identified risk factors for developing burnout for GPs. These include amongst others: working many hours per week, working long days and having a limited number of colleagues. Several of these risk factors provide potential points of engagement to combat GP burnout. Based on the findings of this study, three

recommendations for practice were formulated. These recommendations are discussed in Section 6.6 (p. 179). The recommendations entail 1) a reduction of the length of the working week by reducing the number of patients per FTE GP; 2) a reduction of the amount of unnecessary paperwork and bureaucracy within GP practices and 3) an increase of co-worker support, either within the GP practice or by using the existing collegiate support infrastructure.

7.5 Recommendations for future research

The role of patient characteristics

This study found some significant but weak associations between patient characteristics and burnout scores or demands and resources (cf. Sections 5.3.3, p. 125 and 5.4.3, p. 150). Although these results are merely indicative, the results do suggest that the composition of the practice's catchment can play a role in the development of GP burnout. This topic has not been studied previously and the results give rise to further research.

Future research should preferably include other data sources for assessing the patient population composition than the sources used in this study. Ideally, real patient data is to be used. If this is not feasible, a survey can include questions regarding the GP's perception of his or her practice patient population such as "In my practice the incidence of chronic conditions is lower than / similar to / higher than average." The results of this study are insufficient to establish associations with sufficient certainty, but the results do provide grounds for further exploration of this topic.

Administrative burden

In this study, the role of administrative burden as a relevant job-demand is established (cf. Section 5.4.1, p.137). It is unclear, however, how much time is spent on unnecessary administrative tasks. American studies suggest that the amount of time spent on activities outside the examination room,

predominately follow-up and documentation of care for patients not physically present, accounts for nearly half the work time of a GP (Gottschalk and Flocke 2005). Non-patient-related paperwork accounts for one sixth of the work time of US physicians (Woolhandler and Himmelstein 2014). Recently, a Dutch study was published on the Dutch GP's working hours (Van Hassel et al. 2016). This study revealed that about 56% of the GP's working hours is spent on direct patient-related activities, 26% on indirect patient-related activities, and 18% on non-patient related activities. It is unclear, however, how much of these indirect patient-related activities and non-patient related activities are necessary and generally accepted as relevant and what percentage could be considered to be 'bureaucracy'. A further exploration of this topic is warranted.

Qualitative study

As described in Section 2.2.1 (p. 13), burnout research started out with studies that were predominantly designed as qualitative studies. Many of the initial studies in the late 1970's and early 1980's were interview based. These interviews have led to the development of the Maslach Burnout Inventory, which was soon accepted as a golden standard for determining the level of burnout. With the wide acceptance of a standard measurement instrument, the research undertaken in the field became more and more quantitative in nature. Currently, the majority of studies in this area are quantitative studies with a research design similar to the design of this study. An implication of this type of study design is that it provides little insight into the 'why' and 'how' questions. This type of empirical study merely establishes associations. With the inclusion of demands and resources in this study, some insight regarding the 'how' questions came to light, but explanations regarding why certain characteristic are associated with an increase or a decrease of burnout scores remain to be hypotheses. Findings of qualitative studies could complement the findings of quantitative empirical studies, which could lead to a much better understanding of the phenomenon burnout.

Longitudinal study

The vast majority of studies that are carried out in the field of burnout research use cross-sectional measurements. Longitudinal studies are scarce. There are two considerations why a longitudinal study design could be preferable.

1) The first consideration is methodological in nature. Cross-sectional studies, like this one, can establish associations, but only longitudinal studies can measure the effects of e.g. a reduction in the length of the working week. Do burnout scores improve, if a GP decides to work less hours per day or week or if a GP decides to hire additional support staff? This type of study could provide stronger evidence for strategies to combat GP burnout.

2) The second consideration is, that longitudinal studies provide the opportunity to evaluate the effectiveness of (preventive) measures such as discussing work-stress in collegiate support groups. Does a GP's burnout score improve, when he or she participates in such a group? Studying this type of relevant questions calls for a longitudinal study design.

The last recommendation for future research therefore is to use a longitudinal study design instead of a cross-sectional one.

7.6 Conclusions of thesis

This study set out to examine job-related stress and specifically burnout among Dutch GPs. The extant literature suggests that burnout is common among physicians, especially those working in the front line of healthcare access.

To investigate this topic, a combination of existing theoretical frameworks was used. Frequently used models in burnout literature and models derived from the different demands and resources theories were combined in this

study to form one empirical model. This combination of different models turned out to be a viable approach.

The benefit of combining two ‘families of models’ was twofold:

1) Firstly, because it facilitated investigating the GP’s personal and professional characteristics’ association with the three dimensions of burnout, while investigating the role of job demands and resources at the same time. In this manner, this study was – to some extent – able to go beyond merely establishing associations. The measured demands and resources were used to establish a potential explanation as to why these associations were found.
2) Secondly, several GP characteristics could be identified, that might be of relevance in the development of burnout. These characteristics were not directly associated with one of the three dimensions of burnout themselves, but they were associated with the GP’s demands and resources which in turn were found to be associated with the three dimensions of burnout. Without the incorporation of the demands and resources in the model, the relevance of these GP characteristics could not have been established.

It is suggested in the literature that demands and resources both play a distinct role in the development of burnout. While high job demands lead to increased emotional exhaustions, the absence of resources leads to increased depersonalisation. This study provided support for Demerouti’s theory regarding this distinct role of demands and resources.

The availability of detailed health data at a neighbourhood level enabled this study to incorporate new elements in the model that were not studied previously. Although in this ‘pioneering’ study, only very small associations were found between characteristics of a practice’s patient population and the

GP's demands and resources, these novel findings were significant and justify further investigation.

For this study five specific research objectives were formulated. All five research objectives were achieved. This study has resulted in the following specific results:

- It has delivered an updated measurement of burnout among Dutch GPs.
- It has provided insight in the GP's characteristics that are directly associated with one or more of the three dimensions of burnout (longer consultation duration, working more hours per week, working more days per week and not being professionally active outside of one's own practice were all found to be associated with increased emotional exhaustion).
- It has offered potential explanations for these associations by means of analysis of variation in job demands and resources.
- It has provided insight into the distinct role of job demands and resources (support for the hypothesis offered by Demerouti et al. in 2001).
- It highlighted the GP's characteristics that are associated with increased or decreased job demands and resources in order to identify additional risk factors for GP burnout (working as a practice owner, working long days, working in a solo practice, having a limited number of colleagues (independent of their function) and not being in a relationship).
- It has presented novel findings that suggest that the composition of a practice's catchment (e.g. the percentage of patients with chronic diseases) is of relevance in the context of GP burnout, albeit that the found associations were weak.

- It has offered specific recommendations, based on the findings of this study, to help prevent GP burnout including reducing the number of patients per FTE GP, trimming unnecessary paperwork and bureaucracy within GP practices, and increasing the opportunities for co-worker support within the GP practice or by using the existing collegiate support infrastructure for peer support and learning on work-stress and burnout.

To date, physician burnout remains to be a matter of concern. The consequences of physician burnout are severe. Not only for the professional involved, but also for the patient and society at large as argued previously in this thesis. The findings of this study can be used in practice by policy makers and professionals to help prevent GP burnout.

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Appendix I: Survey (as used in Dutch)

Introductie
Welkom bij het onderzoek naar werkdruk en werkbeleving van huisartsen.
Wilt u meer informatie over de achtergrond van het onderzoek of de gebruikte onderzoeksinstrumenten? Kijk dan op www.huisarts2014.nl

Wilt u contact opnemen met de onderzoeker? Stuur een mail naar duchatteau@lsj.nl

De vragenlijst bestaat uit drie delen.
- gegevens over uw praktijk en uzelf: tezamen 22 vragen
- 20 stellingen (Utrechtse werkbelevingslijst)
- 21 eens-oneens vragen (Job Content Questionnaire)
Aan het eind van de vragenlijst worden nog enkele open vragen gesteld.

Als u een vraag of een deel van de vragenlijst wilt overslaan, druk dan op de knop "volgende" onder de vragen.

Op geen van de vragen is een antwoord verplicht.

Deelname aan dit onderzoek is anoniem en uiteraard vrijwillig. Indien u tijdens of na het antwoorden van de vragen besluit dat uw antwoorden niet mogen worden gebruikt, geef dit dan aan na de laatste vraag.

Bij voorbaat hartelijk dank voor uw deelname!
Druk op de knop "volgende" om de vragenlijst te starten.

Deel I, Kenmerken praktijk (1 van 2)
Op deze en de volgende pagina worden gegevens gevraagd over uw praktijk.

Bent u waarnemer? Vul dan voor zover bekend de gegevens in van de praktijk waar u in de afgelopen drie maanden het meeste uren heeft gewerkt. Zijn deze gegevens niet bij u bekend? Laat dan de vraag leeg.

Onze praktijk is een solopraktijk / duopraktijk / groepspraktijk / gezondheidscentrum (meerdere disciplines) anders, namelijk…

Hoeveel huisartsen zijn er in de praktijk werkzaam?
(totaal aantal huisartsen dat werkzaam is in de praktijk, inclusief HIDHAs en vaste waarnemers, maar exclusief AIOS huisartsgeneeskunde)
aantal huisartsen …
totaal fte …

Hoeveel doktersassistenten zijn er in de praktijk werkzaam?
aantal doktersassistenten …
aantal fte …

Hoeveel hbo opgeleide ondersteuners (praktijkverpleegkundige / POH / verpleegkundig specialist / NP) zijn er in de praktijk werkzaam?
Indien er geen hbo opgeleide ondersteuners werkzaam zijn, svp 0 invullen in beide vakjes.
aantal hbo ondersteuners …
aantal fte …

Deel I, Kenmerken praktijk (2 van 2)
Wat is de omvang van uw praktijk, uitgedrukt in aantal patiënten per voltijd (1 fte) huisarts? Aantal patiënten per 1 fte huisarts …

Gemiddelde duur consult tijdens spreekuur
Aantal minuten per consult …

Heeft u een “inloopspreekuur”?
Nee / ja

Heeft uw praktijk een bijzonder aanbod (bijvoorbeeld reizigersadvisering)?
Nee / ja, namelijk [veld]

Wat is uw regionale / preferente verzekeraar?
Achmea / Agis / CZ / De Friesland / DSW / Menzis / VGZ / Zorg en Zekerheid / Anders, namelijk …

Wat zijn de vier cijfers van de postcode van de praktijk?
Deze gegevens zijn nodig om uw antwoorden te kunnen relateren aan socio-economische omgevingsfactoren en eerstelijns vraag/aanbod in uw buurt. Met de LHV zijn afspraken gemaakt over de wijze van opslag, beveiliging en gebruik van de data. Uw privacy is gewaarborgd. Kijk voor meer informatie op www.huisarts2014.nl.
Vier cijfers postcode praktijk …

Deel I, Kenmerken huisarts (1 van 2)
In welke hoedanigheid bent u werkzaam als huisarts?
(Indien u in meerdere hoedanigheden werkzaam bent, kies dan uw grootste aanstelling)
(mede) praktijkhouder / HIDHA / huisarts in loondienst (HID) van zorgorganisatie / waarnemer / anders, namelijk …

Hoeveel dagen per week bent u werkzaam als huisarts? (exclusief ANW diensten, afgerond op halve dagen)
0 / 0,5 / 1 / 1,5 2 / 2,5 / 3 / 3,5 / 4 / 4,5 / 5

Hoeveel uur per week besteedt u gemiddeld aan uw werk als huisarts? (inclusief diensten, administratie, nascholing, overleg, etc).
Aantal uren per week …

Heeft u naast uw werk als huisarts nog een andere werkkring / dienstverband? (bijvoorbeeld aanstelling bij een universiteit)
Nee / Ja, namelijk …

Wat is uw geslacht?
Vrouw / man

Wat is uw leeftijd?
Leeftijd in jaren …

Deel I, Kenmerken huisarts (2 van 2)
Hoeveel jaar bent u werkzaam als huisarts?
Aantal jaren werkzaam als huisarts …

Heeft u een partner / vaste relatie?
Ja / nee

Heeft u bij u inwonende kinderen?
Indien nee, kunt u de vragen hieronder leeg laten of een nul invullen
Ja / nee

Hoeveel kinderen jonger dan zes jaar wonen (deels) bij u thuis?
Aantal kinderen jonger dan zes ...

Hoeveel kinderen van zes jaar of ouder wonen (deels) bij u thuis?
Aantal kinderen van zes of ouder …

Deel II, Werkbeleving (1 van 2)
Wilt u per uitspraak door één vakje aan te klikken aangeven in hoeverre u zich in de uitspraak herkent?

nooit, sporadisch (een paar keer per jaar), af en toe (eens per maand of minder), regelmatig (een paar keer per maand), dikwijls (eens per week), zeer dikwijls (een paar keer per week) en altijd (dagelijks)

Ik voel me mentaal uitgeput door mijn werk

Aan het einde van een werkdag voel ik me leeg

Ik voel me vermoeid als ik ’s morgens opsta en er weer een werkdag voor me ligt

Ik kan me gemakkelijk inleven in de gevoelens van patiënten

Ik heb het gevoel dat ik sommige patiënten/cliënten te onpersoonlijk behandel

De hele dag met mensen werken vormt een zware belasting voor mij

Ik weet de problemen van mijn patiënten adequaat op te lossen

Ik voel me ‘opgebrand’ door mijn werk

Ik heb het gevoel dat ik het leven van andere mensen op een positieve manier beïnvloed door mijn werk

Ik heb het idee dat ik onverschilliger ben geworden tegenover andere mensen sinds ik deze baan heb

Deel II, Werkbeleving (2 van 2)
Wilt u per uitspraak door één vakje aan te klikken aangeven in hoeverre u zich in de uitspraak herkent?

nooit, sporadisch (een paar keer per jaar), af en toe (eens per maand of minder), regelmatig (een paar keer per maand), dikwijls (eens per week), zeer dikwijls (een paar keer per week) en altijd (dagelijks)

Ik maak me zorgen dat mijn werk me gevoelsmatig afstompt

Ik voel me gefrustreerd dor mijn baan

Ik denk dat ik me te veel inzet voor mijn werk

Het kan me niet echt schelen wat er met sommige patiënten gebeurt

Met mijn patiënten kan ik gemakkelijk een ontspannen sfeer scheppen

Het werken met patiënten vrolijkt mij op

Ik heb in deze baan veel waardevolle dingen bereikt

Ik voel me aan het einde van mijn Latijn

In mijn werk ga ik heel rustig om met emotionele problemen

Ik heb het gevoel dat patiënten mij hun problemen verwijten

Deel III, Werkinhoud (1 van 2)
Wilt u per uitspraak door één vakje aan te klikken aangeven in hoeverre u het met de uitspraak eens bent?

helemaal oneens, oneens, eens, helemaal eens

Mijn baan vereist dat ik nieuwe dingen leer

In mijn baan komen steeds dezelfde kortdurende werkzaamheden voor

Mijn baan vereist dat ik creatief ben

Mijn baan biedt me de ruimte veel beslissingen zelf te nemen

Mijn baan vereist een hoge mate van vakbekwaamheid

Ik heb in mijn werk erg weinig vrijheid om te beslissen hoe ik mijn werk doe

Ik krijg op mijn werk heel veel verschillende dingen te doen

Ik heb veel mogelijkheden om mee te beslissen over wat er in mijn werk gebeurt

Ik heb de gelegenheid eigen vakbekwaamheid te ontwikkelen

Mijn baan vereist dat ik erg snel werk

Deel III, Werkinhoud (2 van 2)
Wilt u per uitspraak door één vakje aan te klikken aangeven in hoeverre u het met de uitspraak eens bent?

helemaal oneens, oneens, eens, helemaal eens

Mijn baan vereist dat ik erg hard werk

Er wordt van mij niet te veel werk gevraagd

Ik heb genoeg tijd om het werk af te maken

Ik krijg geen tegenstrijdige opdrachten van anderen

Mijn collega's zijn goed in hun werk

Mijn collega's zijn in mij geïnteresseerd

Mijn collega's zijn vriendelijk

Mijn collega's helpen het werk gedaan te krijgen

Mijn baan vereist dat ik te veel administratieve taken moet uitvoeren

Mijn gezin biedt mij veel steun

Mijn werk concurreert vaak met mijn gezinsleven om aandacht en energie

Slotvragen (1 van 3)
Is het onderwerp *overbelasting* volgens u een punt van zorg voor de beroepsgroep?
Zeker niet / Niet / Weet niet of Geen mening / Wel / Zeker wel
Wilt u uw antwoord toelichten? ….

Is het onderwerp *burnout* volgens u een punt van zorg voor de beroepsgroep?
Zeker niet / Niet / Weet niet of Geen mening / Wel / Zeker wel
Wilt u uw antwoord toelichten? ….

Slotvragen (2 van 3)
Is het onderwerp *overbelasting* volgens u een punt van zorg voor u persoonlijk?
Zeker niet / Niet / Weet niet of Geen mening / Wel / Zeker wel
Wilt u uw antwoord toelichten? ….

Is het onderwerp *burnout* volgens u een punt van zorg voor u persoonlijk?
Zeker niet / Niet / Weet niet of Geen mening / Wel / Zeker wel
Wilt u uw antwoord toelichten? ….

Wat zijn volgens u de belangrijkste bronnen / oorzaken van burnout onder huisartsen? ….

Slotvragen (3 van 3)

Wie zou volgens u *wat* moeten doen om het onderwerp burnout onder huisartsen te adresseren?
Er is geen probleem, er is dus ook geen actie vereist
Ja, dit onderwerp verdient aandacht. Mijn suggestie: …

U heeft de enquête bijna afgerond. Als u nog opmerkingen of toevoegingen heeft horen wij dat graag. U kunt hiervoor onderstaand tekstvak gebruiken. …

Einde vragenlijst

U bent aan het einde gekomen van de vragenlijst.

Hartelijk dank voor uw tijd!

Klik op de knop "gereed" om de vragenlijst af te sluiten.

Appendix II: Survey (English translation)

Introduction
Welcome in the survey on work pressure and work experience of general practitioners. Do you want further information on the study background or the used research instruments? You can find further information at www.huisarts2014.nl.

Do you want to contact the researcher? Send an email to duchatteau@lsj.nl.

The survey consists of three parts.
- questions about you and your practice: together 22 questions
- 20 statements (Utrecht works experience survey)
- 21 agree/disagree questions (Job Content Questionnaire)
The survey concludes with some open ended questions.

If you want to skip a question or a part of the survey, just press “next” below the questions.

In no instance is an answer to any of the questions mandatory.

Participation in this study is anonymous and or course fully voluntary. If you would decide, to withdraw your answers during answering or after you answer the questions, please indicate this at the end of the survey and your answers will be deleted.

Thank you in advance for your participation.
Press the button “next” to start the survey.

Part I, Practice characteristics (1 of 2)
On this page and the subsequent page questions are asked regarding your practice.

Are you a locum GP? Please answer the questions for the practice in which you have worked the most hours in the last three months. Is the information not known to you? You can leave the answer box empty.

Out practice is a solo practice / duo practice / duo practice / healthcare centre (multiple disciplines) / other, please specify …

How many GP are employed in your practice?
(total number of GPs, including salaried GPs and permanent locums, but excluding residents)
Number of GPs …
Total FTE …

How many practice assistants are employed in your practice?
Number of practice assistants …
Total FTE …

How many practice nurses (support staff with a higher vocation training such as practice nurse, nurse specialist, nurse practitioner) are employed in your practice?
Number of practice nurses …
Total FTE…

Part I, Practice characteristics (2 of 2)
What is the size of your practice, expressed in number of patients per fulltime (1 FTE) GP? Number of patients per 1 FTE GP …

Average consultation duration
Number of minutes per consultation …

Do you have a walk-in open access?
No / yes

Does your practice have a special offering (e.g. travelers vaccination service)?
No / yes, please specify …

What is your regional healthcare insurance company?
Achmea / Agis / CZ / De Friesland / DSW / Menzis / VGZ / Zorg en Zekerheid / Other, plese specify …

What are the four digits of your practice's ZIP-code?
These data are needed to relate your responses to socio-economic environment variables and the first line care supply and demand in your neighbourhood. An agreement is made with the LHV regarding storage, protection and use of the data. Your privacy is ensured. You can find further information at www.huisarts2014.nl.
Four digits of your practice's ZIP-code ….

Part I, GP characteristics (1 of 2)
In what capacity are your employed?
(If you are employed in multiple capacities, please answer for your largest appointment)
Practice (co)owner / salaried GP / employed by healthcare organisation / locum GP / other, please specify …

Mow many days per week are you employed?
(excluding night and weekend shifts, rounded to half days)
0 / 0,5 / 1 / 1,5 2 / 2,5 / 3 / 3,5 / 4 / 4,5 / 5

How many hours per week do you work as GP? (including shifts, administration, continued education, meetings, etcetera)
Number of hours per week …

Do you have an additional job / appointment next to your work as GP (e.g. appointment as university lecturer)?
No yes, please specify …

What is your gender?
Female / male

What is your age?
Age in years …

Part I, GP characteristics (2 of 2)
How many years have you been working as a GP?
Number of years work experience as GP …

Do you have a partner / significant other / steady relationship?
Yes / no

Do you have children who are living with the family?
If no, you can either leave the questions below empty or answer 0

How many children aged under six are living with your family?
Number of children aged younger than six …

How many children aged six or older are living wigh your family?
Number of children aged six or older …

Part II, Work experience (1 of 2)
Please tick one box per statement to indicate to what extent you recognise yourself in the statement

never, sporadic (a few times per year or less), occasionally (once a month or less), frequently (several times per month), often (once a week), very often (several times per week) and always (daily)

I feel emotionally drained from my work

I feel used up at the end of the day

I feel tired when I get up in the morning and have to face another day at work

I can easily understand how patients feel about things

I feel I treat some patients too impersonally

Working with people all day is a real strain for me

I deal effectively with the problems of patients

I feel burned out from my work

I feel I am positively influencing other peoples' lives through my work

I have become more callous toward people since I took this job

Part II, Work experience (2 of 2)
Please tick one box per statement to indicate to what extent you recognise yourself in the statement

never, sporadic (a few times per year or less), occasionally (once a month or less), frequently (several times per month), often (once a week), very often (several times per week) and always (daily)

I worry that this job is hardening me emotionally

I feel frustrated by my job

I feel I am working too hard on my job

I don't really care what happens to some patients

I can easily create a relaxed atmosphere with patients

Working with clients cheers me up

I have accomplished many worthwhile things in this job

I feel like I am at the end of my tether

In my work, I deal with emotional problems very calmly

I feel patients blame me for some of their problems

Part III, Job content (1 of 2)
Please tick one box per statement to indicate to what extent you agree with the statement.

Fully disagree, disagree, agree, fully agree

My job requires that I learn new things

My job involves a lot of repetitive work

My job requires me to be creative

My job allows me to make a lot of decisions on my own

My job requires a high level of skill

On my job, I have little freedom to decide how I do my work

I get to do a variety of things on my job

I have a lot to say about what happens on my job

I have the opportunity to develop my own professional skills

My job requires working very fast

Part III, Job content (2 of 2)
Please tick one box per statement to indicate to what extent you agree with the statement.

Fully disagree, disagree, agree, fully agree

My job requires working very hard

I am not asked to do an excessive amount of work

I have enough time to get the job done

I am free from conflicting demands others make

People I work with are competent in doing their jobs

People I work with take a personal interest in me

People I work with are friendly

People I work with are helpful in getting the job done

My job requires me to carry our too many administrative duties

My family provides me with a lot of support

My job often competes with my family life for attention and energy

Final Questions (1 of 3)
In your opinion, is *overstress* a matter of concern <u>for the profession as a whole</u>?
Certainly not / not / don't know or no opinion / yes / definitely
Please elaborate …

In your opinion, is *burnout* a matter of concern <u>for the profession as a whole</u>?
Certainly not / not / don't know or no opinion / yes / definitely
Please elaborate …

Final Questions (2 of 3)
In your opinion, is *overstress* a matter of concern <u>for you personally</u>?
Certainly not / not / don't know or no opinion / yes / definitely
Please elaborate …

In your opinion, is *burnout* a matter of concern <u>for you personally</u>?
Certainly not / not / don't know or no opinion / yes / definitely
Please elaborate …

What, in your opinion, are the most important sources / causes of burnout amongst GPs? …

Final Questions (3 van 3)

In your opinion, *who* should do *what* to address the issue of burnout amongst GPs?
There is no problem, so no action required
Yes, this topic deserves attention. My suggestion …

You have almost completed the survey. If you have any final remarks or things you want to add, you can use the answer box below …

End of survey

You have reached the end of the survey.

Thank you very much for your time!

Click on the button “ready” to close the survey.

Appendix III: Feedback received in pilot study (as received, in Dutch)

Generic remarks:

- “Voor waarnemers zonder vaste praktijk is het eerste deel van de enquête niet in te vullen”
- “Zou je niet ook meer willen weten over persoonlijkheidskenmerken van de huisarts? De een is gevoeliger voor een burn-out dan de ander.”
- “Lay-out: lastig op iPhone in te vullen.”
- “Bij eerste pagina is het misschien wel prettig om te lezen wat er met de resultaten gedaan zal worden. Alleen in kaart brengen? En als dit gebeurd is, wat dan?”
- “Zeer duidelijke vragen, prettig in te vullen, zeer zinnig onderzoek”
- “Prima vragenlijst, geen op of aanmerkingen.”
- “Een aantal stellingen heeft een dubbele ontkenning”
- “'Indien u tijdens of na het antwoorden van de vragen besluit dat uw antwoorden niet mogen worden gebruikt, geef dit dan aan na de laatste vraag.' zou ik naar verderop dezelfde pagina zetten.”
- “Eerste (uitleg) pagina: zou in het geheel korter mogen. het lijkt nu alsof de vragenlijst HEEEEELL lang is, terwijl ik dat wel mee vond vallen. gewoon wat strakker, zodat je sneller start en niet uitgebreid hoeft te lezen.”
- “prima vragenlijst. Geen op of aanmerkingen”
- “Met veel plezier nam ik deel aan je onderzoek, duidelijk, helder en zeer zinnig!”

Question specific remarks:

Practice characteristics:	“decimalen invoeren lukt niet” “moeten punten of komma's worden gebruikt? lukt niet goed” “Aantal patiënten per fte is neem ik aan aantal patiënten per 1 fte.” “Bijzonder aanbod: wat bedoel je?" “Regionale verzekeraar heet meestal: preferente verzekeraar.” “preferente zorgverzekering kunnen meerdere verzekeringen zijn”
Physician characteristics:	“Dagen per week werken: veel huisartsen werken halve dagen, suggestie schalen aanpassen.”
Final questions:	“Zin te lang? Waar wordt naar gevraagd; of de beroepsgroep hier al mee bezig is? Of dat de beroepsgroep dit zou moeten doen?” “Bij twijfel over of mensen dit wel eerlijk zullen "durven" beantwoorden zou je ook nog een andere vraag kunnen toevoegen; over of men dit bij collega huisartsen herkent. Want als iedereen dit bij een ander herkent, maar niet bij zichzelf, klopt er iets niet..” “Met adresseren kan je vermoeden dat dit de actie al zou moeten zijn. vul je hiermee het "wat" al niet in? wat is het doel van deze vraag; HOE de burn out ter sprake brengen bij WIEen op WELKE manier? Of wat zou een oplossing kunnen zijn en wie moet deze uitvoeren?”

Appendix IV: Feedback received in pilot study (translated to English)

Generic remarks:

- “The first part of the survey is hard to fill out for locum GPs without regular/constant practice”
- “Would you not want to know more regarding the personality traits of the GP? Some are more burnout prone than others”
- “Lay-out: hard to fill out on an iPhone”
- “It might be good to read on the first pages what will happen with the outcome. Just measuring? And what after this is done?”
- “Very clear questions, easy to fill out, very useful research project”
- “Excellent questionnaire, no remarks”
- “A number of statements contain double negatives”
- “I would suggest moving the text 'If you, during or after answering the questions, would decide that you do not wish your answers to be used, you can indicate this after the last question' to further down on the same page.”
- “The text on first page containing the explanation should be condensed. It now appears as if the questionnaire is extremely long, while I felt that it really wasn't. Just a concise test enables one to start faster without having to read a lot of text first.”
- “Excellent questionnaire, no remarks”
- “I enjoyed participating in your pilot study. Clear, easy questions, very useful.”

Question specific remarks:

Practice characteristics:	“I am unable to enter decimals” “Should periods or decimals be used? Unable to do so” “Where you write 'number of patients per FTE', I assume that you mean number of patients per 1 FTE?” “What do you mean with ‘Does you practice have a specific expertise/specialty?’ " “The regional insurance company is usually referred to as preferred insurance company” “There can be more than one regional insurance company”
Physician characteristics:	“Many GPs work half days, adjust answer scale to include half days”
Final questions:	“Is this sentence too long? What are you looking for specifically? Whether the profession is addressing the issue or whether the profession should be addressing the issue?” “If you doubt whether respondent will dare to answer this question honestly, you could consider adding a question asking if one has seen symptoms of burnout in colleagues. Because if everyone sees burnout in someone else, but not within themselves, you know something is wrong...” “If you use the word ‘address’ in this question, you could read it as if you are of the opinion that there is an issue to address? What is the aim of this question? HOW burn out should be brought to the attention of WHOM and in WHAT manner? Or what a solution could be and who should be the one to carry out this solution?”

Appendix V: Amendments made in survey on the basis of pilot study feedback

1. At the start of the section on practice characteristics, an instruction for locum GPs has been added: "Are you a locum GP? Fill this section out for the practice in which you have worked the most hours in the past three months. If these data are not known to you, leave blank."
2. The instruction text at the start of the questionnaire is condensed to 162 words (was 189). Furthermore the lay-out was adjusted to make the text look less like "a bulk of text to read".
3. In order to avoid comma / period problems when entering decimals, the answer boxes for the questions regarding quantity of staff were changed from "numerical" to "text". Participants can answer either 2.5 or 2,5 or even 2 1/2 or two and a half.
4. "number of patients per fte GP" was rephrased to "number of patients per 1 fte GP".
5. Examples were added to the questions regarding the practice and GP specialization. These questions now read: "Does your practice offer special services (e.g. travellers consultation and vaccination)?" and "Do you have a registered specialised expertise (e.g. GP-specialist elderly care or GP-specialist Diabetes care)?"
6. The question asking for the regional insurance company now reads: What is your regional / preferred insurance company?". The question type for this question was changed from check one box to check one or more boxes.
7. The response possibilities to the question "how many days per week do you work as GP?" were expanded. Was: 0, 1, 2, 3, 4, 5(fulltime). Changed to: 0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5 4, 4.5, 5(fulltime).
8. The option to answer "multidisciplinary health centre" was added to the answers to the question regarding practice type.

9. The textboxes for the answers regarding special offerings and special expertise were enlarged to allow for multiple answers.
10. The acronym HID was added to the words "huisarts in loondienst" (salaried GP) in the question regarding employment type.
11. The words "at home" were deleted from the question "Do you have a partner at home"? Reworded question: "Do you have a partner / steady relationship?"
12. The questions regarding burnout being a matter of concern to the profession and the individual participant were split in two separate questions asking for overstress and burnout being a matter of concern separately.

Appendix VI: Invitation letter as sent out (in Dutch)

Text of invitation letter as it was sent out in September 2014 by the LHV to a random selection of 4,000 actively practising GPs among its members (in Dutch). The letter was personalised and printed on LHV stationery

Utrecht, september 2014

Geachte heer [naam], mevrouw [naam],

Veel huisartsen ervaren een hoge werkdruk. Het risico op overbelasting is een punt van zorg voor de beroepsgroep. Uit recent onderzoek blijkt dat bijna drie kwart van alle huisartsen bij zichzelf signalen van langdurige stress bemerkt. Onduidelijk zijn echter de exacte oorzaken van stress en overbelasting. Daarom is verdiepend onderzoek nodig. Onderzoek wat TiasNimbas en Bradford University gaan uitvoeren en waar de LHV graag haar medewerking aan verleent.

Doel van dit onderzoek is inzicht te krijgen in de ervaren werkdruk en de werkbeleving. Gemeten met behulp van gevalideerde instrumenten en factoren die met te hoge werkdruk samenhangen. De uitkomsten van dit onderzoek kunnen ons handvatten bieden om deze factoren te reduceren.

LHV, TiasNimbas en Bradford University nodigen u graag uit om deel te nemen aan dit onderzoek en de online vragenlijst in te vullen. Dit kost u 10 tot 15 minuten van uw tijd. Het internetadres en het wachtwoord van de vragenlijst vindt u onderstaand. Uw deelname is anoniem. Daarom is het wachtwoord hetzelfde voor alle deelnemers en niet gerelateerd aan uw NAW gegevens.

Om de resultaten te kunnen koppelen aan omgevingsfactoren zoals de socio-economische status van de wijk waar uw praktijk is gevestigd of het evenwicht tussen zorgvraag en -aanbod, worden in de vragenlijst de vier cijfers van de postcode van uw praktijk gevraagd. Om uw privacy te waarborgen heeft de LHV contractuele afspraken gemaakt met de onderzoeker over opslag, beveiliging en gebruik van de onderzoeksgegevens. Zo worden de postcodegegevens niet in combinatie met de antwoorden op de vragen opgeslagen.

U kunt de vragenlijst vinden op **www.research.net/s/huisarts2014**

Op de website **www.huisarts2014.nl** vindt u ook een link naar de vragenlijst.

Om de vragenlijst te starten is een wachtwoord nodig. Dit wachtwoord is **ha14**

Alle informatie over de onderzoeksdoelen, de gebruikte meetinstrumenten zoals de Utrechtse werkbelevingslijst (UBOS-C), supervisie van het onderzoek, ethische goedkeuring en maatregelen om uw privacy te beschermen kunt u vinden op de website **www.huisarts2014.nl**.

De resultaten van het onderzoek zullen uiteraard met u worden gedeeld. Als u nadere informatie over het onderzoek wilt of als u liever een papieren versie van de vragenlijst wenst te ontvangen, kunt u per mail of telefoon contact opnemen met de onderzoeker Duco Duchatteau: 071-5232900 / duchatteau@lsj.nl

Bij voorbaat hartelijk dank voor uw tijd.

Met vriendelijke groet,

Lodi Hennink,

algemeen directeur

Text of reminder letter as it was sent out in October 2014 by the LHV to all recipients (4,000) of the invitation letter (in Dutch). The letter was personalised and printed on LHV stationery

Utrecht, oktober 2014

Geachte heer [naam], mevrouw [naam],

Vorige maand ontving u van ons een brief met het verzoek om een online enquête in te vullen voor een wetenschappelijk onderzoek naar werkdruk en werkbeleving onder huisartsen. Veel van onze leden hebben inmiddels aan dit verzoek gehoor gegeven, waarvoor onze hartelijke dank.

Mogelijk heeft u nog geen gelegenheid gehad om de vragenlijst in te vullen of is de brief aan uw aandacht ontsnapt. Indien u de vragenlijst nog niet heeft ingevuld, hopen wij dat u dit alsnog wilt doen. Het kost 10 tot 15 minuten van uw tijd. Voor een goede betrouwbaarheid van de onderzoeksresultaten streven wij naar een zo hoog mogelijke respons; vandaar dat u van ons deze herinnering ontvangt. Aangezien het onderzoek anoniem is, hebben wij geen zicht op wie de enquête al heeft ingevuld, derhalve schrijven wij de gehele steekproef nogmaals aan.

Hieronder vindt u het internetadres waar u de vragenlijst kunt invullen en een wachtwoord om de vragenlijst te starten. Uw deelname is anoniem. Daarom is het wachtwoord hetzelfde voor alle deelnemers en niet gerelateerd aan uw NAW gegevens. Om de resultaten te kunnen koppelen aan omgevingsfactoren zoals de socio-economische status van de wijk waar uw praktijk is gevestigd of het evenwicht tussen zorgvraag en -aanbod, worden in de vragenlijst de vier cijfers van de postcode van uw praktijk gevraagd. Om uw privacy te waarborgen heeft de LHV contractuele afspraken gemaakt met de onderzoeker over opslag, beveiliging, en gebruik van de onderzoeksgegevens. Zo worden de postcodegegevens niet in combinatie met de antwoorden op de vragen opgeslagen.

U kunt de vragenlijst vinden op **www.research.net/s/huisarts2014**

Op de website **www.huisarts2014.nl** vindt u ook een link naar de vragenlijst.

Om de vragenlijst te starten is een wachtwoord nodig. Dit wachtwoord is **ha14**

Nadere informatie over het onderzoek kunt u vinden op de website www.huisarts2014.nl. Als u liever een papieren versie van de vragenlijst ontvangt, kunt u per mail of telefoon contact opnemen met de onderzoeker Duco Duchatteau: 071-5232900 / duchatteau@lsj.nl

Hartelijk dank voor uw deelname.

Met vriendelijke groet,

Lodi Hennink,

algemeen directeur

Appendix VII: Translation of invitation letter

Text of invitation letter as it was sent out in September 2014 by the LHV to a random selection of 4,000 actively practising GPs among its members (in Dutch). The letter was personalised and printed on LHV stationery

Utrecht, September 2014

Dear Mr. [name], Mrs. [name]

Many GPs experience high levels of work pressure. The risk for overstress is a matter of concern for the profession. A recent study has shown that almost three quarters of all GPs notice the signs of prolonged stress. The causes of stress and overstrain are insufficiently clear. That is why further in depth study is called for. The LHV is pleased to provide support to this study that will be undertaken by TiasNimbas and Bradford University.

The aim of the study is to gain insight in the experience work pressure and the job experience of GPs. Using validated measurement instruments, factors associated with increased work pressure will be inventoried. The results of this study could identify potential measures to reduce these factors.

The LHV, TiasNimbas and Bradford University kindly invite you to participate in this study and to complete the online survey. This will take 10 to 15 minutes of your time. You will find the internet address of the survey as well as a password below. Your participation is anonymous. That is why the password is identical for all participants and not linked in any way to your personal data.

In order to be able to link the responses to environmental factors such as the socio-economic status of the neighbourhood in which your practice is located, the survey will ask for the four digits of your ZIP-code. To ensure your privacy the LHV has made contractual agreements with the researcher regarding data storage, data protection and the use of the research data. As an example, your ZIP-code data will not be stored in combination with your responses to the survey questions

You can find the survey at **www.research.net/s/huisarts2014**

A link to the survey is also provided at the websits **www.huisarts2014.nl.**

To start with the survey you will need a password. The password is **ha14**

You can find all information regarding the aims of the study, the used measurement instruments such as the Utrecht Work Experience Scale (UBOS-C), ethics approval and measures to protect your privacy on the website **www.huisarts2014.nl**.

Of course will the result of this study be shared with you in due time. If you want further information about the study or if you'd wish to receive a paper version of the survey, you can contact the researcher Duco Duchatteau by phone or by email: 071-5232900 / duchatteau@lsj.nl

Many thanks in advance for your time.

Kind regards,

Lodi Hennink,

General DIrector

Text of reminder letter as it was sent out in October 2014 by the LHV to all recipients (4,000) of the invitation letter (in Dutch). The letter was personalised and printed on LHV stationery

Utrecht, October 2014

Dear Mr. [name], Mrs. [name]

Last month you received a letter from us inviting you to fill out an online survey for academic research on the GP's work-pressure and work experience. Many of our members have already complies with this request, for which we would like to express our gratitude.

Possibly you have not yet had an opportunity to complete the survey or the letter escaped from your attention. If you have not completed the survey yet, we hope that you will do so in the near future. It will take 10 to 15 minutes of your time. We aim for a high response for a maximum reliability of the study outcomes, hence this reminder. Since participation is anonymous, we have no insight into who has or has not yet completed the survey. That is why we send this reminder letter to our entire sample.

Below you can find the Internet address where you can complete the survey and a password to start the survey. Your participation is anonymous, that is why the password is the same for all participants and not linked to your personal data in any way.

In order to be able to link the responses to environmental factors such as the socio-economic status of the neighbourhood in which your practice is located, the survey will ask for the four digits of your ZIP-code. To ensure your privacy the LHV has made contractual agreements with the researcher regarding data storage, data protection and the use of the research data. As an example, your ZIP-code data will not be stored in combination with your responses to the survey questions

You can find the survey at **www.research.net/s/huisarts2014**

A link to the survey is also provided at the website **www.huisarts2014.nl.**

To start with the survey you will need a password. The password is **ha14**

You can find further information on the study on the website www.huisarts2014.nl. If you'd rather receive a paper version of the survey, you can contact the researcher Duco Duchatteau by email or phone: 071-5232900 / duchatteau@lsj.nl

Thank you for your participation.

Kind regards,

Lodi Hennink,

General DIrector

Appendix VIII: Information website (as used, in Dutch)

HUISARTS 2014 — onderzoek naar werkdruk en werkbeleving van huisartsen

Home Vragenlijst Doel Instrumenten Privacy Ethische toetsing Begeleiding Contact

Huisarts 2014

Welkom op de website huisarts2014 met achtergrondinformatie over het promotieonderzoek naar werkdruk en burnout onder huisartsen.

Op deze website vindt u informatie over:

- Het **doel** van het onderzoek
- De gebruikte **onderzoekinstrumenten**
- **Privacy** van de respondenten
- **Ethische toetsing**
- Universitaire **begeleiding**
- **Contactinformatie**

Wilt u direct naar de enquête gaan? **Klik dan hier**.

Om de enquête te starten heeft u een wachtwoord nodig. Dit wachtwoord staat in de brief die u van de LHV heeft gekregen. Wachtwoord kwijt? Stuur een e-mail aan duchatteau@lsj.nl en u ontvangt het wachtwoord.

In samenwerking met

UNIVERSITY OF BRADFORD MAKING KNOWLEDGE WORK

TiasNimbas Business School

LHV Landelijke Huisartsen Vereniging

Doel

Doel van het onderzoek is om inzicht te krijgen in de ervaren werkstress onder huisartsen en de factoren die deze werkstress beïnvloeden.

Meer concreet zijn voor de studie de volgende doelen benoemd:

1. Het vaststellen van de mate waarin huisartsen werkstress ervaren en risico lopen op een professionele burnout.
2. Het vaststellen of en in welke mate persoonlijke, professionele en omgevingsfactoren de ervaren werkstress beïnvloeden.
3. Het onderzoeken in hoeverre variatie in ervaren werkstress kan worden verklaard uit verschil in werkinhoud en werkbeleving.
4. Het identificeren van specifieke groepen die een verhoogd risico op professionele burnout hebben.
5. Het op basis van de bevindingen formuleren van aanbevelingen ten behoeve van de ontwikkeling van preventieve maatregelen of beleid om het risico op een professionele burnout te verkleinen.

Het onderzoek wordt uitgevoerd in het kader van de promotie (Doctorate of Business Administration) van drs. Duco Duchatteau, MBA aan Bradford University. De studie is de invulling van de onderzoeksfase van het TiasNimbas Bradford Doctorate of Business Administration programme.

In samenwerking met

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TiasNimbas
Business School

LHV
Landelijke Huisartsen Vereniging

Instrumenten

Het onderzoek is opgezet als een kwantitatieve empirische studie. Op basis van een cross-sectionele, niet-experimentele meting wordt nieuwe primaire data verkregen met behulp van een online vragenlijst.
Deze primaire data wordt gecombineerd met bestaande (secundaire) databronnen.

Verzameling primaire data, de vragenlijst

De vragenlijst bestaat uit drie delen.

In **deel I** wordt gevraagd naar gegevens over uw praktijk en uzelf.

- De gevraagde praktijk karakteristieken zijn: type praktijk, aantallen artsen en ondersteuners, consultduur, inloopspreekuur, regionale verzekeraar en cijfers postcode (ivm de koppeling aan omgevingsinformatie, zie het kopje secundaire databronnen).
- De gevraagde persoonlijke gegevens zijn: type en omvang aanstelling, uren werk per week, leeftijd en geslacht, werkervaring, overige werkzaamheden en gezinssamenstelling.
- Deel I bestaat uit totaal 22 vragen.

Deel II van de vragenlijst bestaat uit de Utrechtse Werkbelevingslijst (Utrecht Burnout Scale UBOS-C, gebaseerd op de Maslach Burnout Inventory MBI): 20 stellingen, antwoord op 7-punts schaal.

Deel III bestaat uit 21 eens-oneens vragen uit de TNO versie van de Job Content Questionnaire (JCQ).

Aan het eind van de vragenlijst worden nog enkele open vragen gesteld.

Secundaire databronnen

Met behulp van de vier cijfers van de postcode van de praktijk worden de data gecombineerd met diverse gegevens over de wijk waarin de praktijk is gevestigd. Deze gegevens zijn overwegend afkomstig van de Vraag Aanbod Analyse Monitor (VAAM) van het Nivel. Meer informatie over herkomst van deze gegevens is te vinden op **http://vaam.nivel.nl/vaam/home**
In het onderzoek wordt onder meer gekeken naar:

- sociaal demografische samenstelling
- vraag en aanbod van de huisartsenzorg
- gezondheidsdeterminanten

Privacy

Tussen LHV en de onderzoeker zijn contractuele afspraken gemaakt om de privacy van de deelnemers te waarborgen.

Deze afspraken behelzen onder meer de volgende punten:

Verantwoord databeheer:

1. Online opslag van data(sets) zal uitsluitend plaatsvinden in een beveiligde omgeving (SSL-encryptie)
2. Lokale opslag van data zal uitsluitend op met een wachtwoord beveiligde computer plaatsvinden.
3. Behoudens opslag voor backup-doeleinden wordt data niet op draagbare informatiedragers zoals usb-sticks opgeslagen. Voor zover er informatie wordt opgeslagen op een usb stick of andere informatiedrager ten behoeve van backup, zal deze op een beveiligde plaats worden bewaard.
4. De onderzoeksdatabase wordt nimmer aan derden overgedragen.
5. Na afronding van het onderzoek wordt de database bewaard conform de eisen die de universiteit stelt aan de wijze en duur van opslag (*University of Bradford Research Governance & Quality Assurance Code of Good Research Practice*).

Gebruik privacygevoelige gegevens:

1. In geen geval zullen tot een persoon herleidbare gegevens openbaar worden gemaakt. Alle uitingen, inclusief het proefschrift, wetenschappelijke publicaties of mondelinge uitingen dienen zodanig te zijn verwoord dat de anonimiteit van de respondenten is gegarandeerd.
2. In de vragenlijst wordt om de vier cijfers van de postcode gevraagd in verband met koppeling resultaten aan CBS- en VAAM-gegevens. Om de privacy van de respondenten te waarborgen zijn aanvullende maatregelen noodzakelijk. Nadat de koppeling tot stand is gebracht wordt het databestand gesplitst in twee aparte bestanden die op twee aparte plaatsen worden bewaard. Bestand 1 bevat het volgnummer en de postcode. Bestand 2 bevat alle gegevens en het volgnummer, maar niet de postcode.

Ethische toetsing

Het onderzoeksprotocol is ter goedkeuring voorgelegd aan de ethische commissie *(Humanities, Social and Health Sciences Research Ethics Panel)* van Bradford University. De ethische toetsing behelsde onder meer een review door twee onafhankelijke reviewers.

Het onderzoek is goedgekeurd door de ethische commissie *(Humanities, Social and Health Sciences Research Ethics Panel)* op 28 april 2014.

Het onderzoek is geregistreerd onder nummer E374.

In samenwerking met

Begeleiding

Het promotieonderzoek wordt uitgevoerd in het kader van het *TiasNimbas / Bradford University Doctorate of Business Adminstration programme*.

Het onderzoek wordt uitgevoerd door drs. Duco Duchatteau, MBA.

Het onderzoek wordt begeleid door *Bradford University School of Management*.

De wetenschappelijke begeleiding wordt verzorgd door:

- Dr. E. Breen *(principle supervisor)*
- Dr. D.P Spicer *(associate supervisor)*

Laatstgenoemde is hoofd van de *Human Resource Management and Organisational Behaviour group*.

Voor het onderzoek wordt samengewerkt met de Landelijke Huisartsen Vereniging (LHV). De LHV heeft goedkeuring verleend aan de vragenlijst en steunt het onderzoek inhoudelijk en logistiek.

In samenwerking met

Contact

contactgegevens onderzoeker:

drs. Duco C. Duchatteau, MBA
071-5232900
duchatteau@lsj.nl

In samenwerking met

Appendix IX: Translation of texts on information website

Home

Welcome at the website huisarts2014 with background information on the doctoral research on job-stress and burnout amongst general practitioners.

On this website you can find information on:

- The research aim
- The used research instruments
- Respondent privacy
- Ethics approval
- University supervision
- Contact information

Do you want to start the survey right away? Klick here.

To start the survey you will need a password. The password is stated in the letter you have received from the LHV. Have you lost the password? Please send an email to duchatteau@lsj.nl and you will receive a new password.

Aim

The aim of the research is to gain insight in the experienced job-stress that general practitioners experience and the factors that are associated therewith. The following more specific aims were formulated:

1. To assess the level in which general practitioners experience job-stress and are exposed to the risk to develop a professional burnout.
2. To assess the extent to which personal, professional and environmental characteristics are of relevance for the experienced job-stress.
3. To investigate to what extent variation in experienced job-stress can be explained by job content and experience.
4. To identify specific groups that have an increased risk for developing a professional burnout.
5. To propose recommendations, based on the findings of this study, for developing preventive measures or policies to reduce the risk for professional burnout.

The study is conducted as part of the doctoral research (Doctorate of Business Administration) that is conducted by Duco Duchatteau, MSc, MBA at Bradford University. The study is the research phase of the TiasNimbas Bradford Doctorate of Business Administration programme.

Instruments

The study is designed as a quantitative empirical study. A cross-sectional empirical measurement is carried out to acquire new primary data using an online survey. The primary data will be combined with secondary data sources.

Collecting primary data, the survey

The survey consists of three parts:

In *Part I* questions about your practice and yourself are asked. The asked practice characteristics: are practice type, number of physicians and support staff, consultation duration, walk-in open access, regional insurance company, digits of ZIP-code (for linking the data to environmental variables, see below). The asked personal characteristics are: employment type and size, hours per week worked, age and gender, work experience, other employments and family composition. Part I consists of a total of 22 questions.

Part II consists of the Utrecht Work Experience Survey (Utrecht Burnout Scale UBOS-S, based on the Maslach Burnout Inventory MBI):
20 statements with answers on a 7-point scale.

Part III consists of 21 agree/disagree questions derived from the TNO version of the Job Content Questionnaire JCQ.

At the end of the survey some open ended questions are asked.

Secondary data sources

Using the four digits of your practice's ZIP-code the collected data will be linked to a number of characteristics of the neighbourhood in which your practice is located. These data predominantly come from the Nivel Supply and Demand Analysis Monitor (VAAM). More information regarding this instrument can be found at http://vaam.nivel.nl/vaam/home

Variables that will be included in the analyses include: socio-demographic composition, supply and demand general practice care, health determinants.

Privacy

Contractual agreements are made between the LHV and the researcher to ensure the privacy of participants. The agreements include:

Sound data management

Online storage of data(sets) will exclusively be hosted in a secured environment (SSL-encryption)

Only password protected computers are used for local data storage.

Save for backup purposes data will not be stored on portable information carriers such as USB memory sticks. Portable data storage devices used for backup purposes will be stored in a secured place.

The research database will not be transferred to third parties.

After completion of the study the database will be stored in accordance with the requirements as set forth by the university (University of Bradford Research Governance & Quality Assurance Code of Good Research Practice).

Use of privacy-sensitive data

In no instances will data that can be traced back to an individual be disclosed. All publications, including the thesis, scientific publications or oral presentations must be phrased in such a manner that respondent anonymity is ensured.

In the survey the four digits of the practice ZIP-code is asked to link the responses to VAAM data and data from Statistics Netherlands. To ensure respondent privacy additional measured are required. As soon as the databases of the primary and the secondary data are merged, the database will be split into two separate files that will be stored on two different places. Data file 1 will only consist of the assigned respondent ID number and the ZIP-code. Data file 2 will contain all data and the assigned respondent ID number, but not the ZIP-code.

Ethics approval

The research proposal was submitted to the appropriate Bradford University ethics committee (Humanities, Social and Health Sciences Research Ethics Panel). The ethics review included a review of the research proposal by two independent reviewers.

Ethics approval was granted by the Humanities, Social and Health Sciences Research Ethics Panel on 28 April 2014. The study is registered under the number E374.

Supervision

The study is carried out as part of the TiasNimbas / Bradford University Doctorate of Business Adminstration programme.

The study is undertaken by Duco Duchatteau, MSc MBA

The Bradford University School of Management provides academic supervision.

The supervisors are:

Dr. E. Breen (principle supervisor)
Dr. D.P Spicer (associate supervisor, Head of the Human Resource Management and Organisational Behaviour group).

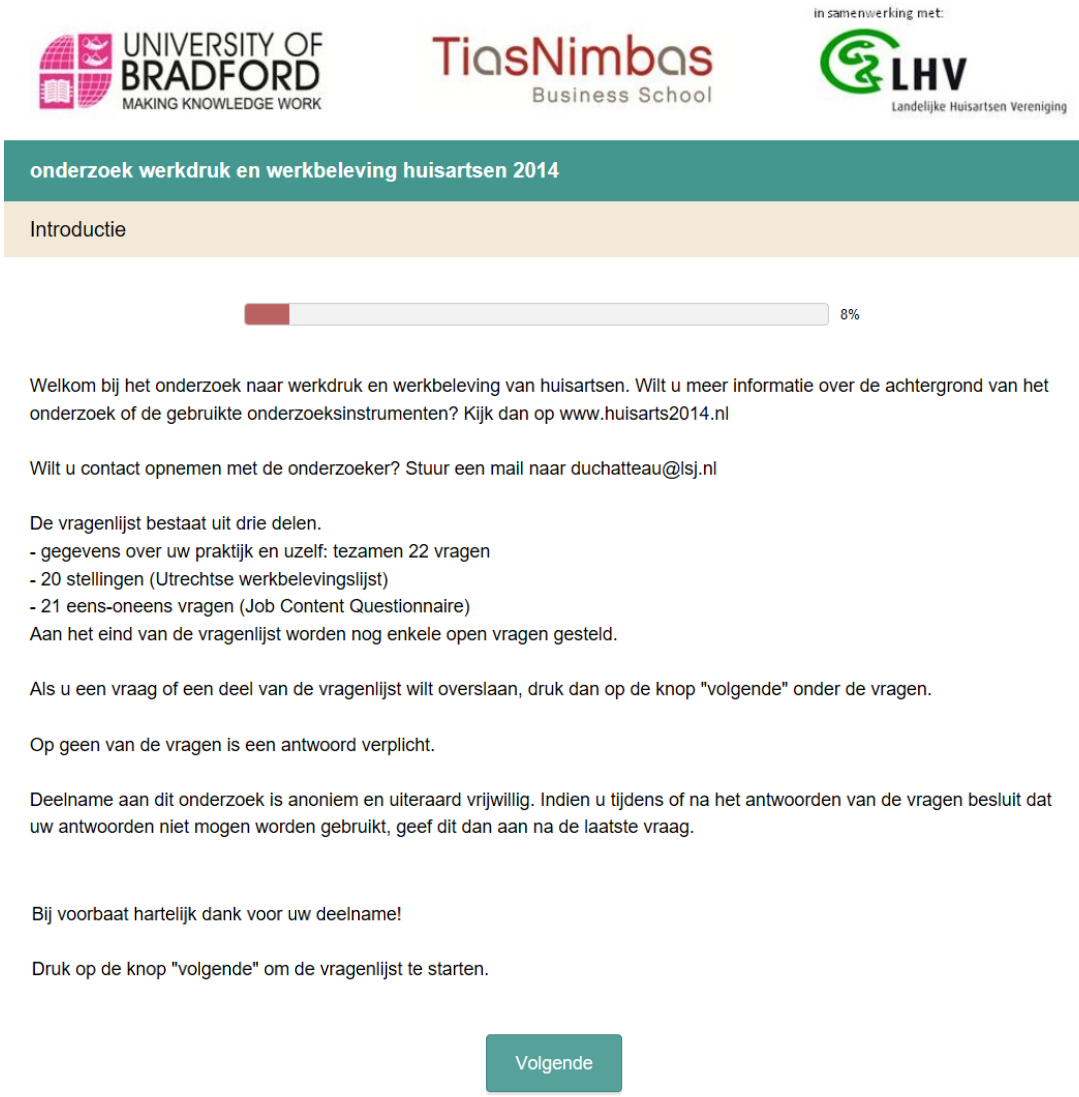
This study is carried out in collaboration with the LHV. The LHV has approved the survey, provides logistical support and endorses the study.

Contact details

The researcher can be contacted at

Duco C. Duchatteau, MSc MBA
071-5132626
duchatteau@lsj.nl

Appendix X: Screen capture of survey (partial)



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in samenwerking met:
LHV
Landelijke Huisartsen Vereniging

onderzoek werkdruk en werkbeleving huisartsen 2014

Deel I, Kenmerken huisarts (1 van 2)

31%

In welke hoedanigheid bent u werkzaam als huisarts?
(Indien u in meerdere hoedanigheden werkzaam bent, kies dan uw grootste aanstelling)

- ◯ (mede)praktijkhouder
- ◯ HIDHA
- ◯ huisarts in loondienst / HID (van zorgorganisatie)
- ◯ waarnemer
- ◯ anders, namelijk

Hoeveel uur per week besteedt u gemiddeld aan uw werk als huisarts?
(inclusief diensten, administratie, nascholing, overleg, etc).

Aantal uren per week:

Heeft u naast uw werk als huisarts nog een andere werkkring / dienstverband? (bijvoorbeeld aanstelling bij een universiteit)

- ◯ Nee
- ◯ Ja, namelijk

Hoeveel dagen per week bent u werkzaam als huisarts?
(exclusief ANW diensten, afgerond op halve dagen)

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 (voltijd)
- ◯ 0,5
- ◯ 1,5
- ◯ 2,5
- ◯ 3,5
- ◯ 4,5

Wat is uw geslacht?

- ◯ Vrouw
- ◯ Man

Wat is uw leeftijd?

Leeftijd in jaren

Vorige Volgende

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in samenwerking met:
LHV
Landelijke Huisartsen Vereniging

onderzoek werkdruk en werkbeleving huisartsen 2014

Deel III, werkinhoud (2 van 2)

69%

Wilt u per uitspraak door één vakje aan te klikken aangeven in hoeverre u het met de uitspraak eens bent?

	helemaal oneens	oneens	eens	helemaal eens
Mijn baan vereist dat ik erg hard werk	○	○	○	○
Er wordt van mij niet te veel werk gevraagd	○	○	○	○
Ik heb genoeg tijd om het werk af te maken	○	○	○	○
Ik krijg geen tegenstrijdige opdrachten van anderen	○	○	○	○
Mijn collega's zijn goed in hun werk	○	○	○	○
Mijn collega's zijn in mij geïnteresseerd	○	○	○	○
Mijn collega's zijn vriendelijk	○	○	○	○
Mijn collega's helpen het werk gedaan te krijgen	○	○	○	○
Mijn baan vereist dat ik te veel administratieve taken moet uitvoeren	○	○	○	○
Mijn gezin biedt mij veel steun	○	○	○	○
Mijn werk concurreert vaak met mijn gezinsleven om aandacht en energie	○	○	○	○

Vorige Volgende